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## RESEARCH MEMORANDUM

HIGH-SPEED AERODYNAMIC CHARACTERISTICS OF A LATERAL-CONTROL MODEL. III - SECTION CHARACTERISTICS, FENCE STUDIES, AND TABULATED PRESSURE COEFFICIENTS WITH MODIFIED NACA 0012-64 SECTION, 26.6-PERCENT-CHORD, PLAIN AILERON, 0° AND 45° SWEETBACK

By Walter J. Krumm and Joseph W. Cleary

CLASSIFICATION CANCELLED Ames Aerodynamical Laboratory  
Moffett Field, Calif.Authority J W Crowley Date 12/11/53EO (050)By J H - 1 - 8 - 5 - 4 See 742R I = 1876

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## NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

RESEARCH MEMORANDUM

HIGH-SPEED AERODYNAMIC CHARACTERISTICS OF A LATERAL-CONTROL  
MODEL. III - SECTION CHARACTERISTICS, FENCE STUDIES,  
AND TABULATED PRESSURE COEFFICIENTS WITH MODIFIED  
NACA 0012-64 SECTION, 26.6-PERCENT-  
CHORD, PLAIN AILERON, 0° AND  
45° SWEETBACK

By Walter J. Krumm and Joseph W. Cleary

## SUMMARY

Wind-tunnel measurements of the pressure distribution were made on a semispan wing with a modified NACA 0012-64 airfoil section and a plain trailing-edge aileron with the wing unswept and also swept back 45°. The effects of compressibility on the spanwise variation of section normal-force and pitching-moment coefficients were investigated at Mach numbers from 0.75 to 0.925.

The results show that the adverse changes in loading and loss of aileron effectiveness that developed with the wing unswept as the Mach number was increased did not occur with the wing swept back 45° at Mach numbers up to 0.925. Sweeping the wing back 45°, however, significantly reduced the aileron effectiveness at subcritical Mach numbers. A fence on the upper surface near the midsemispan of the swept wing reduced the large decreases in longitudinal stability that developed as the maximum lift of the wing was approached, but a fence nearer the wing tip at about 0.8 semispan was of little value in this respect.

## INTRODUCTION

An investigation was undertaken in the Ames 16-foot high-speed wind tunnel of a semispan wing with an NACA 0012-64 section and a 20-percent-chord plain aileron as a basis for developing means of adequate lateral control at high speeds. (See reference 1.) It was found from this investigation that the aileron overbalanced and lost effectiveness at moderate speeds and was therefore not suitable for a general study. In order to delay this overbalance and loss in effectiveness, the trailing-edge angle was reduced from 20.6° to 13.1° by extending the trailing edge 9 percent of the wing chord. The force and moment characteristics of this modified section are presented in reference 2.

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The results of measurements of wing pressure distribution are presented herein for the wing with the modified section. The pressure data were desired to show the spanwise variation of the section normal-force and pitching-moment coefficients for sweepback of the 0.229-chord line of the wing of  $0^\circ$  and  $45^\circ$  at Mach numbers covering the force-divergence range of the unswept wing. Tests of fences on the  $45^\circ$  swept-back wing are included to determine if the decrease in stability that occurred as the stall was approached could be reduced or delayed to a higher lift coefficient.

#### NOTATION

The coefficients and symbols used in this report are defined as follows:

$$C_D \text{ drag coefficient } \left( \frac{\text{drag}}{qS} \right)$$

$$C_L \text{ lift coefficient } \left( \frac{\text{lift}}{qS} \right)$$

$$C_m \text{ pitching-moment coefficient about a lateral axis passing through} \\ \text{the quarter point of the mean aerodynamic chord } \left( \frac{\text{pitching moment}}{qS\bar{c}} \right)$$

$$P \text{ pressure coefficient } \left( \frac{p-p_s}{q} \right)$$

$$c_m \text{ section pitching-moment coefficient normal to and about the 0.229-chord} \\ \text{line}$$

$$c_n \text{ section normal-force coefficient of sections normal to the 0.229-chord} \\ \text{line}$$

a speed of sound in air, feet per second

b semispan of model, feet

c chord of the wing parallel to the plane of symmetry, feet

$$\bar{c} \text{ mean aerodynamic chord } \left( \frac{\int_0^b c^2 dy}{\int_0^b c dy} \right), \text{ feet}$$

- M Mach number  $(\frac{V}{a})$
- p local static pressure, pounds per square foot
- $p_s$  free-stream static pressure, pounds per square foot
- q dynamic pressure  $(\frac{1}{2} \rho V^2)$ , pounds per square foot
- R Reynolds number based on  $\bar{c}$
- S area of semispan model, square feet
- u subscript denoting uncorrected values
- V velocity of the free air stream, feet per second
- y spanwise distance from wing root, feet
- $\alpha$  angle of attack of model, degrees
- $\delta_a$  aileron deflection measured in a plane normal to the hinge line, positive when the free edge is deflected downward, degrees
- $\eta'$  semispan station normal to a line through the sweep pivot point and parallel to the 0.229-chord line, percent of the unswept semispan
- $\rho$  mass density of air in the free air stream, slugs per cubic foot

#### DESCRIPTION OF MODEL AND APPARATUS

A semispan wing panel was tested at two angles of sweepback,  $0^\circ$  and  $45^\circ$ . The dimensions of the wing at these two angles of sweep are given both in figure 1 and in table I and a view of the  $45^\circ$  swept-back installation is given in figure 2. A baffle was installed on the wing near the tunnel wall (fig. 2) to direct the leakage air from the tunnel-wall gap away from the surface of the model.

As described in reference 2, the section normal to the 0.229-chord line of the wing panel was a modified NACA 0012-64 section. The modification consisted of an extension of the wing chord at the trailing edge of 9-percent chord. The new trailing-edge profile was determined by straight lines tangent to the original section and to the radius of the new trailing edge. This modification reduced the trailing-edge angle from  $20.6^\circ$  for the original NACA 0012-64 section to  $13.1^\circ$ . The coordinates for this modified section which was 11 percent thick are given in table II.

The wing was fitted with a leading-edge aileron and a trailing-edge aileron. The leading-edge aileron was installed as indicated in figure 1 but was not deflected for the tests reported here. The chord of the trailing-edge aileron was 26.6 percent of the wing chord perpendicular to the 0.229-chord line and extended from 0.56 of the unswept wing semispan to the tip and from 0.48 of the swept-back wing semispan to the tip. This aileron had a radius nose and was flat-sided and unsealed. For most of these tests this aileron was deflected from 0° to 10°. For both the leading- and trailing-edge ailerons there were gaps of 1/16 inch between the ailerons and the wing as shown in figure 1.

Six rows of pressure orifices (fig. 3) were placed perpendicular to the 0.229-wing chord line at 0.179, 0.417, 0.581, 0.724, 0.867, and 0.935 of the unswept wing semispan. The pressures were transmitted through tubing to mercury manometers.

Fences were located on the 45° swept-back wing at 0.412 and 0.790 of the semispan, as shown in figure 3. Each fence had a height of 0.05 chord from the wing surface.

#### CORRECTIONS TO DATA

Corrections for tunnel-wall effects to the angle of attack and drag coefficient data for the 45° swept-back wing were applied by the method of reference 3 as follows:

$$\alpha = \alpha_u + 0.619 C_L$$

$$C_D = C_{D_u} + 0.0090 C_L^2$$

The tunnel wall, from which the semispan model was mounted, was effectively a plane of symmetry for the flow over a full-span model. Thus the pressure and section coefficients represent those for a full-span model with ailerons identically deflected. The test Mach numbers and dynamic pressures were corrected by the method of reference 4 for the blocking effect of the model. Owing to the structural rigidity of the wing and aileron system the elastic deformation of the model was considered negligible. No corrections were made for the effects of the tunnel-wall boundary layer passing over the model. This boundary layer had a thickness of about 3 inches to where the velocity in the boundary layer was approximately 95 percent of the free-stream velocity.

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RESULTS AND DISCUSSION

The pressure-distribution measurements of this investigation are tabulated in tables III and IV as pressure-coefficient data for the unswept and swept-back wing, respectively, for angles of attack of  $0^\circ$  and  $\pm 4^\circ$  and deflection angles of the aileron ranging from  $0^\circ$  to  $15^\circ$ . An index to these tables of pressure data is given on page 11. Parts of the tables are incomplete because of loading limitations of the model structure or failure of the photographic recording equipment.

The results of the pressure-distribution measurements have been integrated for both the unswept and  $45^\circ$  swept-back wing to give the section normal-force and pitching-moment coefficients. With the wing swept back, the pressure orifice stations retained the same distance from the sweep pivot point as with the wing unswept. (See fig. 3.) Thus the section coefficients are presented at stations normal to a line that was parallel to the 0.229-chord line and that passed through the sweep pivot point. These stations at which the section coefficients are presented are given in percent of the unswept semispan in figure 3.

Included in this report are data showing the effects of fences on the lift, drag, and pitching-moment characteristics of the  $45^\circ$  swept-back model.

The average Reynolds numbers for the Mach number range of the tests are shown in figure 4.

## Section Characteristics

The variation of the section normal-force coefficient along the semi-span of the unswept wing is presented in figure 5 for Mach numbers covering the divergence range. It may be observed from these data that there was a lack of correlation between the span loadings obtained at angles of attack of  $-4^\circ$  and  $4^\circ$  with the aileron undeflected. This lack of symmetry is believed due to slight inaccuracies in model construction, to errors in angle-of-attack measurements, and to an insufficient number of pressure orifices to accurately define the pressure distribution. The primary effects of compressibility were: first, a loss in effectiveness of the aileron, and second, a decrease in the variation of section normal-force coefficient with angle of attack. At angles of attack from  $-4^\circ$  to  $4^\circ$  and a Mach number of 0.75, deflecting the aileron from  $0^\circ$  to  $15^\circ$  increased the section normal-force coefficient at all spanwise stations. The decrease in effectiveness of the aileron at the supercritical Mach numbers shown previously in reference 2 is indicated in figure 5 by the marked decrease in ability of the aileron to change the section normal-force coefficient at  $4^\circ$  angle of attack as the Mach number was increased above 0.75. Reversals in aileron effectiveness are indicated at  $-4^\circ$  angle of attack for Mach numbers of 0.85 and above.

The wing pressure distribution indicates that these reversals are primarily the result of changes in loading over the aileron which effect is opposite to that which normally occurred when the aileron was deflected at subcritical Mach numbers.

A decrease in the variation of section normal-force coefficient with angle of attack is readily apparent from figure 5 for Mach numbers above about 0.825 at all spanwise stations. This decrease appears to be most severe at about 60 percent of the semispan, where the tuft studies of reference 2 showed a region of separated flow near the trailing edge.

The effect of sweeping the wing back  $45^\circ$  on the variation of section normal-force coefficient across the span is illustrated by comparing figures 5 and 6. It is apparent that  $45^\circ$  sweepback was sufficient to delay the undesirable effects of compressibility on the section normal-force coefficient to a Mach number above 0.925. The data of reference 2 show that sweeping the wing back  $45^\circ$  reduced the aileron lift and rolling moment approximately 50 percent for subcritical Mach numbers. This loss in effectiveness at 0.75 Mach number is clearly indicated by a comparison of figures 5(a) and 6(a). However, the loss and reversals in effectiveness of the aileron noted previously for the unswept wing at the divergence Mach number for this plan form did not occur with the wing swept back  $45^\circ$  at any Mach number to 0.925. (See fig. 6.) The center of normal force moved toward the tip when the wing was swept back  $45^\circ$  and for this configuration the effect of increasing Mach number was to increase this outward movement.

The spanwise variations of the section pitching-moment coefficient with the wing unswept and swept back  $45^\circ$  are presented in figures 7 and 8, respectively, to show the torsional moments produced about the 22.9-percent-chord line. For the unswept wing at Mach numbers below about 0.85, the section pitching-moment coefficient over the span covered by the aileron became more negative with increasing positive angles of aileron deflection. At a Mach number of 0.85, however, somewhat erratic reversals in this normal variation of section moment coefficient were noted at  $-4^\circ$  angle of attack, and at the higher Mach numbers, reversals also occurred at  $0^\circ$  and  $4^\circ$  angle of attack. With the wing swept back  $45^\circ$ , no such reversals in the variation of section pitching-moment coefficient occurred up to the highest Mach number of the test (0.925).

#### Effects of Fences

A single fence was placed on the upper surface of the  $45^\circ$  swept-back wing parallel to the free air stream either near the

midsemispan or near the tip of the wing, as shown in figure 3. The purpose of these devices was to retard the spanwise flow of the boundary-layer air in an attempt to alleviate the loss in stability of the wing in the upper lift-coefficient range shown in reference 2. The lift, drag, and pitching-moment characteristics with and without the fences are shown in figures 9, 10, and 11, respectively. The decrease in static longitudinal stability at the higher lift coefficients, characteristic of highly swept-back wings, was reduced in severity when the midsemispan fence was added (fig. 11). The tip fence did not appear to improve the stability characteristics. For Mach numbers above about 0.80, a sufficiently high lift coefficient was not reached to show what effect the fences would have on the stability near the stall at the higher Mach numbers.

While the gain in stability from adding the midsemispan fence indicated that separation of flow at the outer sections of the wing was probably delayed, no increase in maximum lift coefficient (fig. 9) was observed for the range of Mach numbers at which the maximum lift coefficient was reached. Neither the lift-curve slope nor the angle of attack for zero lift was significantly affected by the addition of either fence (fig. 9). Although the addition of either fence increased the drag coefficient slightly (fig. 10), the drag-divergence Mach number was not reduced sufficiently to fall within the Mach number range of the test.

#### CONCLUDING REMARKS

Section normal-force coefficients computed from measurements of pressures on a semispan wing with a modified NACA 0012-64 section show that, with the wing unswept, there was a loss in effectiveness of the aileron at  $4^{\circ}$  angle of attack as the Mach number was increased above 0.75. Reversals in the variation of section normal-force and section pitching-moment coefficients with aileron deflection were indicated at the higher Mach numbers. Although sweeping the wing back  $45^{\circ}$  reduced the low-speed effectiveness of the aileron, no loss or reversals in effectiveness were noted up to the highest Mach number of the test (0.925).

A fence near the midsemispan of the swept back wing reduced slightly the large decrease in static longitudinal stability that developed in the upper lift-coefficient range. A fence nearer the wing tip did not improve the longitudinal-stability characteristics.

Ames Aeronautical Laboratory,  
National Advisory Committee for Aeronautics,  
Moffett Field, California.

## REFERENCES

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2. Krumm, Walter J., and Anderson, Joseph L.: High-Speed Aerodynamic Characteristics of a Lateral-Control Model. II - Modified NACA 0012-64 Section With a 26.6-Percent-Chord Plain Trailing Edge Aileron; Wing Unswept and Swept Back  $45^\circ$ . NACA RM A9L27, 1950.
3. Swanson, Robert S., and Toll, Thomas A.: Jet-Boundary Corrections for Reflection-Plane Models in Rectangular Wind Tunnels. NACA Rep. 770, 1943.
4. Herriot, John G.: Blockage Corrections for Three-Dimensional-Flow Closed-Throat Wind Tunnels, With Consideration of the Effect of Compressibility. NACA RM A7B28, 1947.

TABLE I.— MODEL DIMENSIONS

Dimension	Unswept wing	Swept-back wing
Semispan, feet	7	5.327
Semispan area, square feet	13.3	13.17
Aspect ratio (based on full span)	7.37	4.31
Taper ratio	0.50	0.48
Mean aerodynamic chord, feet	2.01	2.68
Distance from root chord to mean aerodynamic chord, feet	3.05	2.27
Wing root chord parallel to the air stream, feet	2.572	3.442
Projected tip chord parallel to the air stream, feet	1.286	1.657
Sweep of leading edge, degrees	2.41 back	47.41 back
Sweep of 0.229 wing-chord line, degrees	0	45 back
Sweep of trailing edge, degrees	8.06 forward	36.94 back
Sweep of leading-edge aileron hinge line, degrees	0.95 back	45.95 back
Sweep of trailing-edge aileron hinge line, degrees	5.30 forward	40.60 back
Wing thickness, based on chord parallel to the air stream, percent chord	11.01	8.39
Trailing-edge angle, in plane parallel to the air stream, degrees	13.12	10.0



TABLE II.— COORDINATES IN PERCENT CHORD  
FOR THE MODIFIED NACA 0012-64 SECTION

Station	Ordinate
0	0
1.25	1.80
2.50	2.40
5.00	3.12
7.50	3.62
10.00	4.01
15.00	4.58
20.00	4.98
25.00	5.25
30.00	5.41
35.00	5.50
40.00	5.48
45.00	5.37
50.00	5.18
55.00	4.88
60.00	4.50
70.00	3.45
80.00	2.32
90.00	1.21
100.00	0.
L.E. radius:	1.45
T.E. radius:	.10



## INDEX TO TABLES OF PRESSURE COEFFICIENTS

(All values in degrees)

Wing unswept			Wing swept back 45°		
Table	$\delta_a$	$\alpha_u$	Table	$\delta_a$	$\alpha_u$
III(a)	0	-4	IV(a)	0	-4
(b)	0	0	(b)	0	0
(c)	0	4	(c)	0	4
(d)	2	-4	(d)	2	-4
(e)	2	0	(e)	2	0
(f)	2	4	(f)	2	4
(g)	4	-4	(g)	4	-4
(h)	4	0	(h)	4	0
(i)	4	4	(i)	4	4
(j)	6	-4	(j)	6	-4
(k)	6	0	(k)	6	0
(l)	6	4	(l)	6	4
(m)	10	-4	(m)	10	-4
(n)	10	0	(n)	10	0
(o)	10	4	(o)	10	4
(p)	15	-4			
(q)	15	0			
(r)	15	4			



TABLE III.- PRESSURE COEFFICIENTS FOR THE WING UNSWEPT

(a)  $\delta_a, 0^\circ; \alpha_u, -4^\circ$ .

Station	Percent chord	Upper surface						Lower surface					
		Mach number						Mach number					
		0.75	0.80	0.85	0.89	0.875	0.90	0.75	0.80	0.85	0.89	0.875	0.90
A	0	1.03	1.10	1.13	1.15	1.17	1.19	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-
	13.73	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-
	27.5	-	-	-	-	-	-	-	-	-	-	-	-
	36.7	-	-	-	-	-	-	-	-	-	-	-	-
	45.9	-	-	-	-	-	-	-	-	-	-	-	-
	55.0	-	-	-	-	-	-	-	-	-	-	-	-
T	64.2	-	-	-	-	-	-	-	-	-	-	-	-
	73.4	-	-	-	-	-	-	-	-	-	-	-	-
	78.0	-	-	-	-	-	-	-	-	-	-	-	-
	82.6	-	-	-	-	-	-	-	-	-	-	-	-
	87.8	-	-	-	-	-	-	-	-	-	-	-	-
B	0	1.03	1.18	1.15	1.17	1.20	1.21	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-
	13.73	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-
	27.5	-	-	-	-	-	-	-	-	-	-	-	-
	36.7	-	-	-	-	-	-	-	-	-	-	-	-
	45.9	-	-	-	-	-	-	-	-	-	-	-	-
	55.0	-	-	-	-	-	-	-	-	-	-	-	-
C	64.2	-	-	-	-	-	-	-	-	-	-	-	-
	73.4	-	-	-	-	-	-	-	-	-	-	-	-
	78.0	-	-	-	-	-	-	-	-	-	-	-	-
	82.6	-	-	-	-	-	-	-	-	-	-	-	-
	87.8	-	-	-	-	-	-	-	-	-	-	-	-
D	0	1.03	1.10	1.13	1.15	1.17	1.19	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-
	13.73	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-
	27.5	-	-	-	-	-	-	-	-	-	-	-	-
	36.7	-	-	-	-	-	-	-	-	-	-	-	-
	45.9	-	-	-	-	-	-	-	-	-	-	-	-
	55.0	-	-	-	-	-	-	-	-	-	-	-	-
E	64.2	-	-	-	-	-	-	-	-	-	-	-	-
	73.4	-	-	-	-	-	-	-	-	-	-	-	-
	78.0	-	-	-	-	-	-	-	-	-	-	-	-
	82.6	-	-	-	-	-	-	-	-	-	-	-	-
	87.8	-	-	-	-	-	-	-	-	-	-	-	-
F	0	1.04	1.11	1.14	1.15	1.17	1.19	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-
	13.73	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-
	27.5	-	-	-	-	-	-	-	-	-	-	-	-
	36.7	-	-	-	-	-	-	-	-	-	-	-	-
	45.9	-	-	-	-	-	-	-	-	-	-	-	-
	55.0	-	-	-	-	-	-	-	-	-	-	-	-
G	64.2	-	-	-	-	-	-	-	-	-	-	-	-
	73.4	-	-	-	-	-	-	-	-	-	-	-	-
	78.0	-	-	-	-	-	-	-	-	-	-	-	-
	82.6	-	-	-	-	-	-	-	-	-	-	-	-
	87.8	-	-	-	-	-	-	-	-	-	-	-	-
H	0	1.03	1.12	1.18	1.21	1.24	1.26	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-
	13.73	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-
	27.5	-	-	-	-	-	-	-	-	-	-	-	-
	36.7	-	-	-	-	-	-	-	-	-	-	-	-
	45.9	-	-	-	-	-	-	-	-	-	-	-	-
	55.0	-	-	-	-	-	-	-	-	-	-	-	-
I	64.2	-	-	-	-	-	-	-	-	-	-	-	-
	73.4	-	-	-	-	-	-	-	-	-	-	-	-
	78.0	-	-	-	-	-	-	-	-	-	-	-	-
	82.6	-	-	-	-	-	-	-	-	-	-	-	-
	87.8	-	-	-	-	-	-	-	-	-	-	-	-

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TABLE III.—CONTINUED

(b)  $\delta_a, 0^\circ; \alpha_u, 0^\circ$ .



TABLE III.- CONTINUED

(c)  $\delta_a, 0^\circ; \alpha_u, 4^\circ$ .

Station	Percent chord	Upper surface						Lower surface					
		Mach number						Mach number					
		0.75	0.80	0.85	0.85	0.875	0.90	0.75	0.80	0.85	0.85	0.875	0.90
A	0	0.94	1.03	1.08	-	1.09	1.12	-	-	-	-	-	-
	-1.93	-0.69	-0.76	-	-	-	-	-	-	-	-	-	-
	-1.81	-0.88	-0.88	-	-	-	-	-	-	-	-	-	-
	-1.75	-1.03	-1.03	-	-	-	-	-	-	-	-	-	-
	-1.65	-1.18	-1.18	-	-	-	-	-	-	-	-	-	-
	-1.58	-1.32	-1.32	-	-	-	-	-	-	-	-	-	-
	-1.51	-1.45	-1.45	-	-	-	-	-	-	-	-	-	-
	-1.44	-1.58	-1.58	-	-	-	-	-	-	-	-	-	-
	-1.37	-1.70	-1.70	-	-	-	-	-	-	-	-	-	-
	-1.30	-1.80	-1.80	-	-	-	-	-	-	-	-	-	-
B	0	0.94	1.03	1.08	-	1.09	1.12	-	-	-	-	-	-
	-1.93	-0.69	-0.76	-	-	-	-	-	-	-	-	-	-
	-1.81	-0.88	-0.88	-	-	-	-	-	-	-	-	-	-
	-1.75	-1.03	-1.03	-	-	-	-	-	-	-	-	-	-
	-1.65	-1.18	-1.18	-	-	-	-	-	-	-	-	-	-
	-1.58	-1.32	-1.32	-	-	-	-	-	-	-	-	-	-
	-1.51	-1.45	-1.45	-	-	-	-	-	-	-	-	-	-
	-1.44	-1.58	-1.58	-	-	-	-	-	-	-	-	-	-
	-1.37	-1.70	-1.70	-	-	-	-	-	-	-	-	-	-
	-1.30	-1.80	-1.80	-	-	-	-	-	-	-	-	-	-
C	0	0.94	1.03	1.08	-	1.09	1.12	-	-	-	-	-	-
	-1.93	-0.69	-0.76	-	-	-	-	-	-	-	-	-	-
	-1.81	-0.88	-0.88	-	-	-	-	-	-	-	-	-	-
	-1.75	-1.03	-1.03	-	-	-	-	-	-	-	-	-	-
	-1.65	-1.18	-1.18	-	-	-	-	-	-	-	-	-	-
	-1.58	-1.32	-1.32	-	-	-	-	-	-	-	-	-	-
	-1.51	-1.45	-1.45	-	-	-	-	-	-	-	-	-	-
	-1.44	-1.58	-1.58	-	-	-	-	-	-	-	-	-	-
	-1.37	-1.70	-1.70	-	-	-	-	-	-	-	-	-	-
	-1.30	-1.80	-1.80	-	-	-	-	-	-	-	-	-	-
D	0	0.94	1.03	1.08	-	1.09	1.12	-	-	-	-	-	-
	-1.93	-0.69	-0.76	-	-	-	-	-	-	-	-	-	-
	-1.81	-0.88	-0.88	-	-	-	-	-	-	-	-	-	-
	-1.75	-1.03	-1.03	-	-	-	-	-	-	-	-	-	-
	-1.65	-1.18	-1.18	-	-	-	-	-	-	-	-	-	-
	-1.58	-1.32	-1.32	-	-	-	-	-	-	-	-	-	-
	-1.51	-1.45	-1.45	-	-	-	-	-	-	-	-	-	-
	-1.44	-1.58	-1.58	-	-	-	-	-	-	-	-	-	-
	-1.37	-1.70	-1.70	-	-	-	-	-	-	-	-	-	-
	-1.30	-1.80	-1.80	-	-	-	-	-	-	-	-	-	-
E	0	0.94	1.03	1.08	-	1.09	1.12	-	-	-	-	-	-
	-1.93	-0.69	-0.76	-	-	-	-	-	-	-	-	-	-
	-1.81	-0.88	-0.88	-	-	-	-	-	-	-	-	-	-
	-1.75	-1.03	-1.03	-	-	-	-	-	-	-	-	-	-
	-1.65	-1.18	-1.18	-	-	-	-	-	-	-	-	-	-
	-1.58	-1.32	-1.32	-	-	-	-	-	-	-	-	-	-
	-1.51	-1.45	-1.45	-	-	-	-	-	-	-	-	-	-
	-1.44	-1.58	-1.58	-	-	-	-	-	-	-	-	-	-
	-1.37	-1.70	-1.70	-	-	-	-	-	-	-	-	-	-
	-1.30	-1.80	-1.80	-	-	-	-	-	-	-	-	-	-
F	0	0.94	1.03	1.08	-	1.09	1.12	-	-	-	-	-	-
	-1.93	-0.69	-0.76	-	-	-	-	-	-	-	-	-	-
	-1.81	-0.88	-0.88	-	-	-	-	-	-	-	-	-	-
	-1.75	-1.03	-1.03	-	-	-	-	-	-	-	-	-	-
	-1.65	-1.18	-1.18	-	-	-	-	-	-	-	-	-	-
	-1.58	-1.32	-1.32	-	-	-	-	-	-	-	-	-	-
	-1.51	-1.45	-1.45	-	-	-	-	-	-	-	-	-	-
	-1.44	-1.58	-1.58	-	-	-	-	-	-	-	-	-	-
	-1.37	-1.70	-1.70	-	-	-	-	-	-	-	-	-	-
	-1.30	-1.80	-1.80	-	-	-	-	-	-	-	-	-	-
G	0	0.94	1.03	1.08	-	1.09	1.12	-	-	-	-	-	-
	-1.93	-0.69	-0.76	-	-	-	-	-	-	-	-	-	-
	-1.81	-0.88	-0.88	-	-	-	-	-	-	-	-	-	-
	-1.75	-1.03	-1.03	-	-	-	-	-	-	-	-	-	-
	-1.65	-1.18	-1.18	-	-	-	-	-	-	-	-	-	-
	-1.58	-1.32	-1.32	-	-	-	-	-	-	-	-	-	-
	-1.51	-1.45	-1.45	-	-	-	-	-	-	-	-	-	-
	-1.44	-1.58	-1.58	-	-	-	-	-	-	-	-	-	-
	-1.37	-1.70	-1.70	-	-	-	-	-	-	-	-	-	-
	-1.30	-1.80	-1.80	-	-	-	-	-	-	-	-	-	-

NACA

TABLE III.—CONTINUED

(d)  $\delta_a, 2^\circ; \alpha_1, -4^\circ$ .

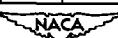


TABLE III.- CONTINUED

(e)  $\delta_a, 2^{\circ}; \alpha_u, 0^{\circ}$ .

Station	Percent chord	Upper surface						Lower surface					
		Mach number						Mach number					
		0.75	0.80	0.825	0.85	0.875	0.90	0.75	0.80	0.825	0.85	0.875	0.90
A	0	1.15	1.17	1.18	1.19	1.21	1.21	—	—	—	—	—	—
	2.3	—31	—28	—17	—15	—09	—03	—	—	—	—	—	—
	4.6	—30	—47	—46	—39	—34	—26	—	—	—	—	—	—
	6.9	—33	—45	—40	—38	—34	—28	—	—	—	—	—	—
	9.2	—30	—48	—42	—40	—35	—29	—	—	—	—	—	—
	13.73	—21	—61	—57	—52	—45	—39	—	—	—	—	—	—
	18.35	—15	—53	—57	—54	—49	—42	—	—	—	—	—	—
	27.3	—43	—48	—42	—41	—38	—34	—	—	—	—	—	—
	36.7	—43	—53	—51	—48	—40	—36	—	—	—	—	—	—
	45.9	—43	—54	—51	—48	—40	—37	—	—	—	—	—	—
	53.0	—	—	—	—	—	—	—	—	—	—	—	—
	61.2	—	—	—	—	—	—	—	—	—	—	—	—
	73.4	—12	—12	—09	—08	—09	—08	—	—	—	—	—	—
	82.6	—03	—03	—0	—0	—0	—0	—	—	—	—	—	—
	87.2	—	—	—	—	—	—	—	—	—	—	—	—
B	0	1.13	1.16	1.17	1.18	1.20	1.20	—	—	—	—	—	—
	2.3	—33	—49	—45	—37	—38	—33	—	—	—	—	—	—
	4.6	—37	—44	—40	—38	—31	—26	—	—	—	—	—	—
	6.9	—33	—47	—43	—38	—31	—26	—	—	—	—	—	—
	9.2	—33	—47	—43	—38	—31	—26	—	—	—	—	—	—
	13.73	—33	—48	—43	—38	—31	—26	—	—	—	—	—	—
	18.35	—33	—48	—43	—38	—31	—26	—	—	—	—	—	—
	27.3	—	—	—	—	—	—	—	—	—	—	—	—
	36.7	—30	—48	—43	—38	—31	—26	—	—	—	—	—	—
	45.9	—35	—47	—42	—38	—31	—26	—	—	—	—	—	—
	53.0	—35	—47	—42	—38	—31	—26	—	—	—	—	—	—
	61.2	—30	—48	—43	—38	—31	—26	—	—	—	—	—	—
	73.4	—11	—09	—08	—06	—05	—04	—	—	—	—	—	—
	82.6	—01	—02	—02	—01	—01	—01	—	—	—	—	—	—
	87.2	—04	—07	—07	—07	—07	—07	—	—	—	—	—	—
C	0	1.18	1.17	1.17	1.18	1.20	1.20	—	—	—	—	—	—
	2.3	—33	—45	—40	—37	—38	—33	—	—	—	—	—	—
	4.6	—30	—45	—40	—37	—38	—33	—	—	—	—	—	—
	6.9	—30	—48	—43	—38	—33	—28	—	—	—	—	—	—
	9.2	—33	—48	—43	—38	—33	—28	—	—	—	—	—	—
	13.73	—33	—48	—43	—38	—33	—28	—	—	—	—	—	—
	18.35	—33	—48	—43	—38	—33	—28	—	—	—	—	—	—
	27.3	—	—	—	—	—	—	—	—	—	—	—	—
	36.7	—37	—48	—43	—38	—33	—28	—	—	—	—	—	—
	45.9	—43	—48	—43	—38	—33	—28	—	—	—	—	—	—
	53.0	—43	—48	—43	—38	—33	—28	—	—	—	—	—	—
	60.6	—42	—48	—43	—38	—33	—28	—	—	—	—	—	—
	68.8	—41	—48	—43	—38	—33	—28	—	—	—	—	—	—
	73.4	—15	—19	—20	—11	—18	—11	—	—	—	—	—	—
	78.0	—	—	—	—	—	—	—	—	—	—	—	—
	82.6	—	—	—	—	—	—	—	—	—	—	—	—
	87.2	—	—	—	—	—	—	—	—	—	—	—	—
D	0	1.13	1.17	1.17	1.18	1.20	1.20	—	—	—	—	—	—
	2.3	—33	—46	—42	—38	—35	—30	—	—	—	—	—	—
	4.6	—30	—46	—42	—38	—35	—30	—	—	—	—	—	—
	6.9	—30	—48	—43	—38	—35	—30	—	—	—	—	—	—
	9.2	—33	—48	—43	—38	—35	—30	—	—	—	—	—	—
	13.73	—33	—48	—43	—38	—35	—30	—	—	—	—	—	—
	18.35	—33	—48	—43	—38	—35	—30	—	—	—	—	—	—
	27.3	—	—	—	—	—	—	—	—	—	—	—	—
	36.7	—37	—48	—43	—38	—35	—30	—	—	—	—	—	—
	45.9	—43	—48	—43	—38	—35	—30	—	—	—	—	—	—
	53.0	—43	—48	—43	—38	—35	—30	—	—	—	—	—	—
	60.6	—42	—48	—43	—38	—35	—30	—	—	—	—	—	—
	68.8	—41	—48	—43	—38	—35	—30	—	—	—	—	—	—
	73.4	—19	—22	—15	—14	—19	—15	—	—	—	—	—	—
	78.0	—09	—07	—01	—01	—01	—01	—	—	—	—	—	—
	82.6	—04	—	—	—	—	—	—	—	—	—	—	—
	87.2	—	—	—	—	—	—	—	—	—	—	—	—
E	0	—	—	—	—	—	—	—	—	—	—	—	—
	2.3	—	—	—	—	—	—	—	—	—	—	—	—
	4.6	—	—	—	—	—	—	—	—	—	—	—	—
	6.9	—	—	—	—	—	—	—	—	—	—	—	—
	9.2	—	—	—	—	—	—	—	—	—	—	—	—
	13.73	—	—	—	—	—	—	—	—	—	—	—	—
	18.35	—	—	—	—	—	—	—	—	—	—	—	—
	27.3	—	—	—	—	—	—	—	—	—	—	—	—
	36.7	—	—	—	—	—	—	—	—	—	—	—	—
	45.9	—	—	—	—	—	—	—	—	—	—	—	—
	53.0	—	—	—	—	—	—	—	—	—	—	—	—
	61.2	—	—	—	—	—	—	—	—	—	—	—	—
	73.4	—	—	—	—	—	—	—	—	—	—	—	—
	82.6	—	—	—	—	—	—	—	—	—	—	—	—
	87.2	—	—	—	—	—	—	—	—	—	—	—	—
F	0	—	—	—	—	—	—	—	—	—	—	—	—
	2.3	—	—	—	—	—	—	—	—	—	—	—	—
	4.6	—	—	—	—	—	—	—	—	—	—	—	—
	6.9	—	—	—	—	—	—	—	—	—	—	—	—
	9.2	—	—	—	—	—	—	—	—	—	—	—	—
	13.73	—	—	—	—	—	—	—	—	—	—	—	—
	18.35	—	—	—	—	—	—	—	—	—	—	—	—
	27.3	—	—	—	—	—	—	—	—	—	—	—	—
	36.7	—	—	—	—	—	—	—	—	—	—	—	—
	45.9	—	—	—	—	—	—	—	—	—	—	—	—
	53.0	—	—	—	—	—	—	—	—	—	—	—	—
	61.2	—	—	—	—	—	—	—	—	—	—	—	—
	73.4	—	—	—	—	—	—	—	—	—	—	—	—
	82.6	—	—	—	—	—	—	—	—	—	—	—	—
	87.2	—	—	—	—	—	—	—	—	—	—	—	—

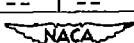


TABLE III.—CONTINUED

(f)  $\delta_a, 2^\circ$ ;  $\alpha_u, 4^\circ$ .

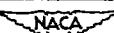


TABLE III.— CONTINUED

(g)  $\delta_a, 4^\circ; \alpha_u, -4^\circ$ .

Station	Per-cent chord	Upper surface						Lower surface					
		Mach number						Mach number					
		0.75	0.80	0.825	0.85	0.875	0.90	0.75	0.80	0.825	0.85	0.875	0.90
A	0	1.04	1.11	1.15	1.15	1.19	1.20	-	-	-	-	-	-
	4.9	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.8	-	-	-	-	-	-	-	-	-	-	-	-
	12.7	-	-	-	-	-	-	-	-	-	-	-	-
	15.6	-	-	-	-	-	-	-	-	-	-	-	-
	18.5	-	-	-	-	-	-	-	-	-	-	-	-
	21.4	-	-	-	-	-	-	-	-	-	-	-	-
	24.3	-	-	-	-	-	-	-	-	-	-	-	-
	27.2	-	-	-	-	-	-	-	-	-	-	-	-
B	0	1.06	1.15	1.19	1.20	1.19	1.19	-	-	-	-	-	-
	4.9	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.8	-	-	-	-	-	-	-	-	-	-	-	-
	12.7	-	-	-	-	-	-	-	-	-	-	-	-
	15.6	-	-	-	-	-	-	-	-	-	-	-	-
	18.5	-	-	-	-	-	-	-	-	-	-	-	-
	21.4	-	-	-	-	-	-	-	-	-	-	-	-
	24.3	-	-	-	-	-	-	-	-	-	-	-	-
	27.2	-	-	-	-	-	-	-	-	-	-	-	-
C	0	1.04	1.14	1.18	1.18	1.15	1.18	-	-	-	-	-	-
	4.9	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.8	-	-	-	-	-	-	-	-	-	-	-	-
	12.7	-	-	-	-	-	-	-	-	-	-	-	-
	15.6	-	-	-	-	-	-	-	-	-	-	-	-
	18.5	-	-	-	-	-	-	-	-	-	-	-	-
	21.4	-	-	-	-	-	-	-	-	-	-	-	-
	24.3	-	-	-	-	-	-	-	-	-	-	-	-
	27.2	-	-	-	-	-	-	-	-	-	-	-	-
D	0	1.06	1.18	1.22	1.22	1.17	1.18	-	-	-	-	-	-
	4.9	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.8	-	-	-	-	-	-	-	-	-	-	-	-
	12.7	-	-	-	-	-	-	-	-	-	-	-	-
	15.6	-	-	-	-	-	-	-	-	-	-	-	-
	18.5	-	-	-	-	-	-	-	-	-	-	-	-
	21.4	-	-	-	-	-	-	-	-	-	-	-	-
	24.3	-	-	-	-	-	-	-	-	-	-	-	-
	27.2	-	-	-	-	-	-	-	-	-	-	-	-
E	0	1.06	1.18	1.22	1.22	1.17	1.18	-	-	-	-	-	-
	4.9	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.8	-	-	-	-	-	-	-	-	-	-	-	-
	12.7	-	-	-	-	-	-	-	-	-	-	-	-
	15.6	-	-	-	-	-	-	-	-	-	-	-	-
	18.5	-	-	-	-	-	-	-	-	-	-	-	-
	21.4	-	-	-	-	-	-	-	-	-	-	-	-
	24.3	-	-	-	-	-	-	-	-	-	-	-	-
	27.2	-	-	-	-	-	-	-	-	-	-	-	-
F	0	1.06	1.18	1.22	1.22	1.17	1.18	-	-	-	-	-	-
	4.9	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-
	9.8	-	-	-	-	-	-	-	-	-	-	-	-
	12.7	-	-	-	-	-	-	-	-	-	-	-	-
	15.6	-	-	-	-	-	-	-	-	-	-	-	-
	18.5	-	-	-	-	-	-	-	-	-	-	-	-
	21.4	-	-	-	-	-	-	-	-	-	-	-	-
	24.3	-	-	-	-	-	-	-	-	-	-	-	-
	27.2	-	-	-	-	-	-	-	-	-	-	-	-

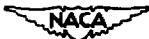


TABLE III.—CONTINUED

(h)  $\delta_a, 4^\circ; \alpha_u, 0^\circ$ .

Station		Percent short	Upper surface							Lower surface						
			Mark number						Mark number							
			0.75	0.80	0.85	0.90			0.75	0.80	0.85	0.90				
A	B	0	1.15 1.34 1.53 1.72 1.91 2.10 2.29 2.48 2.67 2.86 3.05 3.24 3.43 3.62 3.81 4.00 4.19 4.38 4.57 4.76 4.95 5.14 5.33 5.52 5.71 5.90 6.09 6.28 6.47 6.66 6.85 7.04 7.23 7.42 7.61 7.80 7.99 8.18 8.37 8.56 8.75 8.94 9.13 9.32 9.51 9.70 9.89 10.08 10.27 10.46 10.65 10.84 11.03 11.22 11.41 11.60 11.79 11.98 12.17 12.36 12.55 12.74 12.93 13.12 13.31 13.50 13.69 13.88 14.07 14.26 14.45 14.64 14.83 15.02 15.21 15.40 15.59 15.78 15.97 16.16 16.35 16.54 16.73 16.92 17.11 17.30 17.49 17.68 17.87 18.06 18.25 18.44 18.63 18.82 19.01 19.20 19.39 19.58 19.77 19.96 20.15 20.34 20.53 20.72 20.91 21.10 21.29 21.48 21.67 21.86 22.05 22.24 22.43 22.62 22.81 22.99 23.18 23.37 23.56 23.75 23.94 24.13 24.32 24.51 24.70 24.89 25.08 25.27 25.46 25.65 25.84 26.03 26.22 26.41 26.60 26.79 26.98 27.17 27.36 27.55 27.74 27.93 28.12 28.31 28.50 28.69 28.88 29.07 29.26 29.45 29.64 29.83 29.99 30.18 30.37 30.56 30.75 30.94 31.13 31.32 31.51 31.70 31.89 32.08 32.27 32.46 32.65 32.84 33.03 33.22 33.41 33.60 33.79 33.98 34.17 34.36 34.55 34.74 34.93 35.12 35.31 35.50 35.69 35.88 36.07 36.26 36.45 36.64 36.83 37.02 37.21 37.40 37.59 37.78 37.97 38.16 38.35 38.54 38.73 38.92 39.11 39.30 39.49 39.68 39.87 39.99 40.18 40.37 40.56 40.75 40.94 41.13 41.32 41.51 41.70 41.89 42.08 42.27 42.46 42.65 42.84 43.03 43.22 43.41 43.60 43.79 43.98 44.17 44.36 44.55 44.74 44.93 45.12 45.31 45.50 45.69 45.88 45.99 46.18 46.37 46.56 46.75 46.94 47.13 47.32 47.51 47.70 47.89 47.99 48.18 48.37 48.56 48.75 48.94 49.13 49.32 49.51 49.70 49.89 49.99 50.18 50.37 50.56 50.75 50.94 51.13 51.32 51.51 51.70 51.89 52.08 52.27 52.46 52.65 52.84 52.99 53.18 53.37 53.56 53.75 53.94 54.13 54.32 54.51 54.70 54.89 54.99 55.18 55.37 55.56 55.75 55.94 56.13 56.32 56.51 56.70 56.89 56.99 57.18 57.37 57.56 57.75 57.94 58.13 58.32 58.51 58.70 58.89 58.99 59.18 59.37 59.56 59.75 59.94 60.13 60.32 60.51 60.70 60.89 60.99 61.18 61.37 61.56 61.75 61.94 62.13 62.32 62.51 62.70 62.89 62.99 63.18 63.37 63.56 63.75 63.94 64.13 64.32 64.51 64.70 64.89 64.99 65.18 65.37 65.56 65.75 65.94 66.13 66.32 66.51 66.70 66.89 66.99 67.18 67.37 67.56 67.75 67.94 68.13 68.32 68.51 68.70 68.89 68.99 69.18 69.37 69.56 69.75 69.94 70.13 70.32 70.51 70.70 70.89 70.99 71.18 71.37 71.56 71.75 71.94 72.13 72.32 72.51 72.70 72.89 72.99 73.18 73.37 73.56 73.75 73.94 74.13 74.32 74.51 74.70 74.89 74.99 75.18 75.37 75.56 75.75 75.94 76.13 76.32 76.51 76.70 76.89 76.99 77.18 77.37 77.56 77.75 77.94 78.13 78.32 78.51 78.70 78.89 78.99 79.18 79.37 79.56 79.75 79.94 80.13 80.32 80.51 80.70 80.89 80.99 81.18 81.37 81.56 81.75 81.94 82.13 82.32 82.51 82.70 82.89 82.99 83.18 83.37 83.56 83.75 83.94 84.13 84.32 84.51 84.70 84.89 84.99 85.18 85.37 85.56 85.75 85.94 86.13 86.32 86.51 86.70 86.89 86.99 87.18 87.37 87.56 87.75 87.94 88.13 88.32 88.51 88.70 88.89 88.99 89.18 89.37 89.56 89.75 89.94 90.13 90.32 90.51 90.70 90.89 90.99 91.18 91.37 91.56 91.75 91.94 92.13 92.32 92.51 92.70 92.89 92.99 93.18 93.37 93.56 93.75 93.94 94.13 94.32 94.51 94.70 94.89 94.99 95.18 95.37 95.56 95.75 95.94 96.13 96.32 96.51 96.70 96.89 96.99 97.18 97.37 97.56 97.75 97.94 98.13 98.32 98.51 98.70 98.89 98.99 99.18 99.37 99.56 99.75 99.94 00.13 00.32 00.51 00.70 00.89 00.99 01.18 01.37 01.56 01.75 01.94 02.13 02.32 02.51 02.70 02.89 02.99 03.18 03.37 03.56 03.75 03.94 04.13 04.32 04.51 04.70 04.89 04.99 05.18 05.37 05.56 05.75 05.94 06.13 06.32 06.51 06.70 06.89 06.99 07.18 07.37 07.56 07.75 07.94 08.13 08.32 08.51 08.70 08.89 08.99 09.18 09.37 09.56 09.75 09.94 10.13 10.32 10.51 10.70 10.89 10.99 11.18 11.37 11.56 11.75 11.94 12.13 12.32 12.51 12.70 12.89 12.99 13.18 13.37 13.56 13.75 13.94 14.13 14.32 14.51 14.70 14.89 14.99 15.18 15.37 15.56 15.75 15.94 16.13 16.32 16.51 16.70 16.89 16.99 17.18 17.37 17.56 17.75 17.94 18.13 18.32 18.51 18.70 18.89 18.99 19.18 19.37 19.56 19.75 19.94 20.13 20.32 20.51 20.70 20.89 20.99 21.18 21.37 21.56 21.75 21.94 22.13 22.32 22.51 22.70 22.89 22.99 23.18 23.37 23.56 23.75 23.94 24.13 24.32 24.51 24.70 24.89 24.99 25.18 25.37 25.56 25.75 25.94 26.13 26.32 26.51 26.70 26.89 26.99 27.18 27.37 27.56 27.75 27.94 28.13 28.32 28.51 28.70 28.89 28.99 29.18 29.37 29.56 29.75 29.94 30.13 30.32 30.51 30.70 30.89 30.99 31.18 31.37 31.56 31.75 31.94 32.13 32.32 32.51 32.70 32.89 32.99 33.18 33.37 33.56 33.75 33.94 34.13 34.32 34.51 34.70 34.89 34.99 35.18 35.37 35.56 35.75 35.94 36.13 36.32 36.51 36.70 36.89 36.99 37.18 37.37 37.56 37.75 37.94 38.13 38.32 38.51 38.70 38.89 38.99 39.18 39.37 39.56 39.75 39.94 40.13 40.32 40.51 40.70 40.89 40.99 41.18 41.37 41.56 41.75 41.94 42.13 42.32 42.51 42.70 42.89 42.99 43.18 43.37 43.56 43.75 43.94 44.13 44.32 44.51 44.70 44.89 44.99 45.18 45.37 45.56 45.75 45.94 46.13 46.32 46.51 46.70 46.89 46.99 47.18 47.37 47.56 47.75 47.94 48.13 48.32 48.51 48.70 48.89 48.99 49.18 49.37 49.56 49.75 49.94 50.13 50.32 50.51 50.70 50.89 50.99 51.18 51.37 51.56 51.75 51.94 52.13 52.32 52.51 52.70 52.89 52.99 53.18 53.37 53.56 53.75 53.94 54.13 54.32 54.51 54.70 54.89 54.99 55.18 55.37 55.56 55.75 55.94 56.13 56.32 56.51 56.70 56.89 56.99 57.18 57.37 57.56 57.75 57.94 58.13 58.32 58.51 58.70 58.89 58.99 59.18 59.37 59.56 59.75 59.94 60.13 60.32 60.51 60.70 60.89 60.99 61.18 61.37 61.56 61.75 61.94 62.13 62.32 62.51 62.70 62.89 62.99 63.18 63.37 63.56 63.75 63.94 64.13 64.32 64.51 64.70 64.89 64.99 65.18 65.37 65.56 65.75 65.94 66.13 66.32 66.51 66.70 66.89 66.99 67.18 67.37 67.56 67.75 67.94 68.13 68.32 68.51 68.70 68.89 68.99 69.18 69.37 69.56 69.75 69.94 70.13 70.32 70.51 70.70 70.89 70.99 71.18 71.37 71.56 71.75 71.94 72.13 72.32 72.51 72.70 72.89 72.99 73.18 73.37 73.56 73.75 73.94 74.13 74.32 74.51 74.70 74.89 74.99 75.18 75.37 75.56 75.75 75.94 76.13 76.32 76.51 76.70 76.89 76.99 77.18 77.37 77.56 77.75 77.94 78.13 78.32 78.51 78.70 78.89 78.99 79.18 79.37 79.56 79.75 79.94 80.13 80.32 80.51 80.70 80.89 80.99 81.18 81.37 81.56 81.75 81.94 82.13 82.32 82.51 82.70 82.89 82.99 83.18 83.37 83.56 83.75 83.94 84.13 84.32 84.51 84.70 84.89 84.99 85.18 85.37 85.56 85.75 85.94 86.13 86.32 86.51 86.70 86.89 86.99 87.18 87.37 87.56 87.75 87.94 88.13 88.32 88.51 88.70 88.89 88.99 89.18 89.37 89.56 89.75 89.94 90.13 90.32 90.51 90.70 90.89 90.99 91.18 91.37 91.56 91.75 91.94 92.13 92.32 92.51 92.70 92.89 92.99 93.18 93.37 93.56 93.75 93.94 94.13 94.32 94.51 94.70 94.89 94.99 95.18 95.37 95.56 95.75 95.94 96.13 96.32 96.51 96.70 96.89 96.99 97.18 97.37 97.56 97.75 97.94 98.13 98.32 98.51 98.70 98.89 98.99 99.18 99.37 99.56 99.75 99.94 00.13 00.32 00.51 00.70 00.89 00.99 01.18 01.37 01.56 01.75 01.94 02.13 02.32 02.51 02.70 02.89 02.99 03.18 03.37 03.56 03.75 03.94 04.13 04.32 04.51 04.70 04.89 04.99 05.18 05.37 05.56 05.75 05.94 06.13 06.32 06.51 06.70 06.89 06.99 07.18 07.37 07.56 07.75 07.94 08.13 08.32 08.51 08.70 08.89 08.99 09.18 09.37 09.56 09.75 09.94 10.13 10.32 10.51 10.70 10.89 10.99 11.18 11.37 11.56 11.75 11.94 12.13 12.32 12.51 12.70 12.89 12.99 13.18 13.37 13.56 13.75 13.94 14.13 14.32 14.51 14.70 14.89 14.99 15.18 15.37 15.56 15.75 15.94 16.13 16.32 16.51 16.70 16.89 16.99 17.18 17.37 17.56 17.75 17.94 18.13 18.32 18.51 18.70 18.89 18.99 19.18 19.37 19.56 19.75 19.94 20.13 20.32 20.51 20.70 20.89 20.99 21.18 21.37 21.56 21.75 21.94 22.13 22.32 22.51 22.70 22.89 22.99 23.18 23.37 23.56 23.75 23.94 24.13 24.32 24.51 24.70 24.89 24.99 25.18 25.37 25.56 25.75 25.94 26.13 26.32 26.51 26.70 26.89 26.99 27.18 27.37 27.56 27.75 27.94 28.13 28.32 28.51 28.70 28.89 28.99 29.18 29.37 29.56 29.75 29.94 30.13 30.32 30.51 30.70 30.89 30.99 31.18 31.37 31.56 31.75 31.94 32.13 32.32 32.51 32.70 32.89 32.99 33.18 33.37 33.56 33.75 33.94 34.13 34.32 34.51 34.70 34.89 34.99 35.18 35.37 35.56 35.75 35.94 36.13 36.32 36.51 36.70 36.89 36.99 37.18 37.37 37.56 37.75 37.94 38.13 38.32 38.51 38.70 38.89 38.99 39.18 39.37 39.56 39.75 39.94 40.13 40.32 40.51 40.70 40.89 40.99 41.18 41.37 41.56 41.75 41.94 42.13 42.32 42.51 42.70 42.89 42.99 43.18 43.37 43.56 43.75 43.94 44.13 44.32 44.51 44.70 44.89 44.99 45.18 45.37 45.56 45.75 45.94 46.13 46.32 46.51 46.70 46.89 46.99 47.18 47.37 47.56 47.75 47.94 48.13 48.32 48.51 48.70 48.89 48.99 49.18 49.37 49.56 49.75 49.94 50.13 50.32 50.51 50.70 50.89 50.99 51.18 51.37 51.56 51.75 51.94 52.13 52.32 52.51 52.70 52.89 52.99 53.18 53.37 53.56 53.75 53.94 54.13 54.32 54.51 54.70 54.89 54.99 55.18 55.37 55.56 55.75 55.94 56.13 56.32 56.51 56.70 56.89 56.99 57.18 57.37 57.56 57.75 57.94 58.13 58.32 58.51 58.70 58.89 58.99 59.18 59.37 59.56 59.75 59.94 60.13 60.32 60.51 60.70 60.89 60.99 61.18 61.37 61.56 61.75 61.94 62.13 62.32 62.51 62.70 62.89 62.99 63.18 63.37 63.56 63.75 63.94 64.13 64.32 64.51 64.70 64.89 64.99 65.18 65.37 65.56 65.75 65.94 66.13 66.32 66.51 66.70 66.89 66.99 67.18 67.37 67.56 67.75 67.94 68.13 68.32 68.51 68.70 68.89 68.99 69.18 69.37 69.56 69.75 69.94 70.13 70.32 70.51 70.70 70.89 70.99 71.18 71.37 71.56 71.75 71.94 72.13 72.32 72.51 72.70 72.89 72.99 73.18 73.37 73.56 73.75 73.94 74.13 74.32 74.51 74.70 74.89 74.99 75.18 75.37 75.56 75.75 75.94 76.13 76.32 76.51 76.70 76.89 76.99 77.18 77.37 77.56 77.75 77.94 78.13 78.32 78.51 78.70 78.89 78.99 79.18 79.37 79.56 79.75 79.94 80.13 80.32 80.51 80.70 80.89 80.99 81.18 81.37 81.56 81.75 81.94 82.13 82.32 82.51 82.70 82.89 82.99 83.18 83.37 83.56 83.75 83.94 84.13 84.32 84.51 84.70 84.89 84.99 85.18 85.37 85.56 85.75 85.94 86.13 86.32 86.51 86.70 86.89 86.99 87.18 87.37 87.56 87.75 87.94 88.13 88.32 88.51 88.70 88.89 88.99 89.18 89.37 89.56 89.75 89.94 90.13 90.32 90.51 90.70 90.89 90.99 91.18 91.37 91.56 91.75 91.94 92.13 92.32 92.51 92.70 92.89 92.99 93.18 93.37 93.56 93.75 93.94 94.13 94.32 94.51 94.70 94.89 94.99 95.18 95.37 95.56 95.75 95.94 96.13 96.32 96.51 96.70 96.89 96.99 97.18 97.37 97.56 97.75 97.94 98.13 98.32 98.51 98.70 98.89 98.99 99.18 99.37 99.56 99.75 99.94 00.13 00.32 00.51 00.70 00.89 00.99 01.18 01.37 01.56 01.75 01.94 02.13 02.32<br													

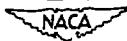


TABLE III.—CONTINUED

(i)  $\delta_a, 4^\circ; \alpha_u, 4^\circ$ .

station	Percent chord	Upper surface						Lower surface					
		Mach number						Mach number					
		0.75	0.60	0.825	0.85	0.875	0.90	0.75	0.80	0.825	0.85	0.875	0.90
A	0	0.92	1.02	1.06	1.10	1.12	1.15	-	-	-	-	-	-
	.25	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	.50	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	.75	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.00	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.30	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.45	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.60	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.75	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
B	0	-	-	-	-	-	-	1.07	1.09	1.11	1.13	1.15	1.17
	.25	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-	-	-	-	-	-
	.50	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-	-	-	-	-	-
	.75	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-	-	-	-	-	-
	1.00	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-	-	-	-	-	-
	1.15	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-	-	-	-	-	-
	1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-	-	-	-	-	-
	1.45	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-	-	-	-	-	-
	1.60	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-	-	-	-	-	-
	1.75	-1.30	-1.30	-1.30	-1.30	-1.30	-1.30	-	-	-	-	-	-
C	0	-	-	-	-	-	-	1.07	1.09	1.11	1.13	1.15	1.17
	.25	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-	-	-	-	-	-
	.50	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-	-	-	-	-	-
	.75	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-	-	-	-	-	-
	1.00	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-	-	-	-	-	-
	1.15	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-	-	-	-	-	-
	1.30	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-	-	-	-	-	-
	1.45	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-	-	-	-	-	-
	1.60	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-	-	-	-	-	-
	1.75	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-	-	-	-	-	-
D	0	-	-	-	-	-	-	1.07	1.09	1.11	1.13	1.15	1.17
	.25	-1.14	-1.14	-1.14	-1.14	-1.14	-1.14	-	-	-	-	-	-
	.50	-1.14	-1.14	-1.14	-1.14	-1.14	-1.14	-	-	-	-	-	-
	.75	-1.14	-1.14	-1.14	-1.14	-1.14	-1.14	-	-	-	-	-	-
	1.00	-1.14	-1.14	-1.14	-1.14	-1.14	-1.14	-	-	-	-	-	-
	1.15	-1.14	-1.14	-1.14	-1.14	-1.14	-1.14	-	-	-	-	-	-
	1.30	-1.14	-1.14	-1.14	-1.14	-1.14	-1.14	-	-	-	-	-	-
	1.45	-1.14	-1.14	-1.14	-1.14	-1.14	-1.14	-	-	-	-	-	-
	1.60	-1.14	-1.14	-1.14	-1.14	-1.14	-1.14	-	-	-	-	-	-
	1.75	-1.14	-1.14	-1.14	-1.14	-1.14	-1.14	-	-	-	-	-	-
E	0	-	-	-	-	-	-	1.07	1.09	1.11	1.13	1.15	1.17
	.25	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	.50	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	.75	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.00	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.30	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.45	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.60	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
	1.75	-1.15	-1.15	-1.15	-1.15	-1.15	-1.15	-	-	-	-	-	-
F	0	-	-	-	-	-	-	1.07	1.09	1.11	1.13	1.15	1.17
	.25	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-	-	-	-	-	-
	.50	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-	-	-	-	-	-
	.75	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-	-	-	-	-	-
	1.00	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-	-	-	-	-	-
	1.15	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-	-	-	-	-	-
	1.30	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-	-	-	-	-	-
	1.45	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-	-	-	-	-	-
	1.60	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-	-	-	-	-	-
	1.75	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-	-	-	-	-	-



TABLE III.— CONTINUED

(j)  $\delta_a, 6^\circ; \alpha_u, -4^\circ$ .

Station	Percent chord	Upper surface						Lower surface					
		Mach number						Mach number					
		0.75	0.80	0.85	0.90	0.75	0.80	0.85	0.90	0.75	0.90	0.75	0.90
A	0	1.05	1.11	1.13	1.15	1.26	1.05	1.08	1.10	1.12	1.15	1.18	1.21
	2.3	1.03	1.09	1.11	1.13	1.24	1.03	1.06	1.08	1.10	1.13	1.16	1.19
	4.6	1.02	1.08	1.10	1.12	1.23	1.02	1.05	1.07	1.09	1.12	1.15	1.18
	6.9	1.01	1.07	1.09	1.11	1.22	1.01	1.04	1.06	1.08	1.11	1.14	1.17
	9.2	1.01	1.07	1.09	1.11	1.21	1.01	1.04	1.06	1.08	1.11	1.14	1.17
	11.5	1.01	1.07	1.09	1.11	1.20	1.01	1.04	1.06	1.08	1.11	1.14	1.17
	13.8	1.01	1.07	1.09	1.11	1.19	1.01	1.04	1.06	1.08	1.11	1.14	1.17
	16.1	1.01	1.07	1.09	1.11	1.18	1.01	1.04	1.06	1.08	1.11	1.14	1.17
	18.4	1.01	1.07	1.09	1.11	1.17	1.01	1.04	1.06	1.08	1.11	1.14	1.17
	20.7	1.01	1.07	1.09	1.11	1.16	1.01	1.04	1.06	1.08	1.11	1.14	1.17
B	0	1.05	1.09	1.12	1.15	1.19	1.05	1.08	1.11	1.14	1.18	1.21	1.24
	2.3	1.03	1.07	1.10	1.13	1.18	1.03	1.06	1.09	1.12	1.16	1.19	1.22
	4.6	1.02	1.06	1.09	1.12	1.17	1.02	1.05	1.08	1.11	1.15	1.18	1.21
	6.9	1.01	1.05	1.08	1.11	1.16	1.01	1.04	1.07	1.10	1.14	1.17	1.20
	9.2	1.01	1.05	1.08	1.11	1.15	1.01	1.04	1.07	1.10	1.14	1.17	1.20
	11.5	1.01	1.05	1.08	1.11	1.14	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	13.8	1.01	1.05	1.08	1.11	1.13	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	16.1	1.01	1.05	1.08	1.11	1.12	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	18.4	1.01	1.05	1.08	1.11	1.11	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	20.7	1.01	1.05	1.08	1.11	1.10	1.01	1.04	1.07	1.10	1.13	1.16	1.19
C	0	1.05	1.09	1.12	1.15	1.19	1.05	1.08	1.11	1.14	1.18	1.21	1.24
	2.3	1.03	1.07	1.10	1.13	1.18	1.03	1.06	1.09	1.12	1.16	1.19	1.22
	4.6	1.02	1.06	1.09	1.12	1.17	1.02	1.05	1.08	1.11	1.15	1.18	1.21
	6.9	1.01	1.05	1.08	1.11	1.16	1.01	1.04	1.07	1.10	1.14	1.17	1.20
	9.2	1.01	1.05	1.08	1.11	1.15	1.01	1.04	1.07	1.10	1.14	1.17	1.20
	11.5	1.01	1.05	1.08	1.11	1.14	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	13.8	1.01	1.05	1.08	1.11	1.13	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	16.1	1.01	1.05	1.08	1.11	1.12	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	18.4	1.01	1.05	1.08	1.11	1.11	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	20.7	1.01	1.05	1.08	1.11	1.10	1.01	1.04	1.07	1.10	1.13	1.16	1.19
D	0	1.05	1.09	1.12	1.15	1.19	1.05	1.08	1.11	1.14	1.18	1.21	1.24
	2.3	1.03	1.07	1.10	1.13	1.18	1.03	1.06	1.09	1.12	1.16	1.19	1.22
	4.6	1.02	1.06	1.09	1.12	1.17	1.02	1.05	1.08	1.11	1.15	1.18	1.21
	6.9	1.01	1.05	1.08	1.11	1.16	1.01	1.04	1.07	1.10	1.14	1.17	1.20
	9.2	1.01	1.05	1.08	1.11	1.15	1.01	1.04	1.07	1.10	1.14	1.17	1.20
	11.5	1.01	1.05	1.08	1.11	1.14	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	13.8	1.01	1.05	1.08	1.11	1.13	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	16.1	1.01	1.05	1.08	1.11	1.12	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	18.4	1.01	1.05	1.08	1.11	1.11	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	20.7	1.01	1.05	1.08	1.11	1.10	1.01	1.04	1.07	1.10	1.13	1.16	1.19
E	0	1.06	1.09	1.12	1.15	1.19	1.06	1.09	1.12	1.15	1.19	1.22	1.25
	2.3	1.04	1.08	1.11	1.14	1.18	1.04	1.07	1.10	1.13	1.17	1.20	1.23
	4.6	1.03	1.07	1.10	1.13	1.17	1.03	1.06	1.09	1.12	1.16	1.19	1.22
	6.9	1.02	1.06	1.09	1.12	1.16	1.02	1.05	1.08	1.11	1.15	1.18	1.21
	9.2	1.01	1.05	1.08	1.11	1.15	1.01	1.04	1.07	1.10	1.14	1.17	1.20
	11.5	1.01	1.05	1.08	1.11	1.14	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	13.8	1.01	1.05	1.08	1.11	1.13	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	16.1	1.01	1.05	1.08	1.11	1.12	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	18.4	1.01	1.05	1.08	1.11	1.11	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	20.7	1.01	1.05	1.08	1.11	1.10	1.01	1.04	1.07	1.10	1.13	1.16	1.19
F	0	1.05	1.08	1.11	1.14	1.18	1.05	1.08	1.11	1.14	1.18	1.21	1.24
	2.3	1.03	1.07	1.10	1.13	1.17	1.03	1.06	1.09	1.12	1.16	1.19	1.22
	4.6	1.02	1.06	1.09	1.12	1.16	1.02	1.05	1.08	1.11	1.15	1.18	1.21
	6.9	1.01	1.05	1.08	1.11	1.15	1.01	1.04	1.07	1.10	1.14	1.17	1.20
	9.2	1.01	1.05	1.08	1.11	1.14	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	11.5	1.01	1.05	1.08	1.11	1.13	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	13.8	1.01	1.05	1.08	1.11	1.12	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	16.1	1.01	1.05	1.08	1.11	1.11	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	18.4	1.01	1.05	1.08	1.11	1.10	1.01	1.04	1.07	1.10	1.13	1.16	1.19
	20.7	1.01	1.05	1.08	1.11	1.09	1.01	1.04	1.07	1.10	1.13	1.16	1.19

NACA

TABLE III.—CONTINUED

(k)  $\delta_a, 6^\circ; \alpha_1, 0^\circ$ .

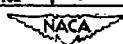


TABLE III.—CONTINUED

(1)  $\delta_a, 6^\circ; \alpha_u, 4^\circ$ .

Station	Percent chord	Upper surface					Lower surface				
		Mach number					Mach number				
		0.70	0.60	0.50	0.40	0.30	0.70	0.60	0.50	0.40	0.30
A	0.1	-1.90	-1.00	-1.15	-1.20	-1.15	-1.35	-1.20	-1.15	-1.30	-1.25
	0.2	-1.80	-1.05	-1.18	-1.22	-1.18	-1.38	-1.22	-1.18	-1.32	-1.27
	0.3	-1.70	-1.00	-1.12	-1.18	-1.12	-1.32	-1.18	-1.12	-1.28	-1.23
	0.4	-1.60	-0.95	-1.05	-1.10	-1.05	-1.25	-1.10	-1.05	-1.20	-1.15
	0.5	-1.50	-0.90	-1.00	-1.05	-1.00	-1.20	-1.05	-1.00	-1.15	-1.10
	0.6	-1.40	-0.85	-0.95	-1.00	-0.95	-1.15	-0.90	-0.85	-1.05	-1.00
	0.7	-1.30	-0.80	-0.90	-0.95	-0.90	-1.10	-0.85	-0.80	-0.95	-0.90
	0.8	-1.20	-0.75	-0.85	-0.90	-0.85	-1.05	-0.80	-0.75	-0.90	-0.85
	0.9	-1.10	-0.70	-0.80	-0.85	-0.80	-1.00	-0.75	-0.70	-0.85	-0.80
	1.0	-1.00	-0.65	-0.75	-0.80	-0.75	-0.95	-0.70	-0.65	-0.80	-0.75
B	0.1	-1.80	-1.00	-1.15	-1.20	-1.15	-1.35	-1.20	-1.15	-1.30	-1.25
	0.2	-1.70	-0.95	-1.05	-1.10	-1.05	-1.30	-1.10	-1.05	-1.25	-1.20
	0.3	-1.60	-0.90	-1.00	-1.05	-1.00	-1.25	-1.05	-1.00	-1.20	-1.15
	0.4	-1.50	-0.85	-0.95	-1.00	-0.95	-1.20	-0.90	-0.85	-1.15	-1.10
	0.5	-1.40	-0.80	-0.90	-0.95	-0.90	-1.15	-0.85	-0.80	-1.10	-1.05
	0.6	-1.30	-0.75	-0.85	-0.90	-0.85	-1.10	-0.80	-0.75	-1.05	-1.00
	0.7	-1.20	-0.70	-0.80	-0.85	-0.80	-1.05	-0.75	-0.70	-1.00	-0.95
	0.8	-1.10	-0.65	-0.75	-0.80	-0.75	-1.00	-0.70	-0.65	-0.95	-0.90
	0.9	-1.00	-0.60	-0.70	-0.75	-0.70	-0.95	-0.65	-0.60	-0.85	-0.80
	1.0	-0.90	-0.55	-0.65	-0.70	-0.65	-0.90	-0.60	-0.55	-0.75	-0.70
C	0.1	-1.80	-1.00	-1.15	-1.20	-1.15	-1.35	-1.20	-1.15	-1.30	-1.25
	0.2	-1.70	-0.95	-1.05	-1.10	-1.05	-1.30	-1.10	-1.05	-1.25	-1.20
	0.3	-1.60	-0.90	-1.00	-1.05	-1.00	-1.25	-1.05	-1.00	-1.20	-1.15
	0.4	-1.50	-0.85	-0.95	-1.00	-0.95	-1.20	-0.90	-0.85	-1.15	-1.10
	0.5	-1.40	-0.80	-0.90	-0.95	-0.90	-1.15	-0.85	-0.80	-1.10	-1.05
	0.6	-1.30	-0.75	-0.85	-0.90	-0.85	-1.10	-0.80	-0.75	-1.05	-1.00
	0.7	-1.20	-0.70	-0.80	-0.85	-0.80	-1.05	-0.75	-0.70	-1.00	-0.95
	0.8	-1.10	-0.65	-0.75	-0.80	-0.75	-1.00	-0.70	-0.65	-0.95	-0.90
	0.9	-1.00	-0.60	-0.70	-0.75	-0.70	-0.95	-0.65	-0.60	-0.85	-0.80
	1.0	-0.90	-0.55	-0.65	-0.70	-0.65	-0.90	-0.60	-0.55	-0.75	-0.70
D	0.1	-1.80	-1.00	-1.15	-1.20	-1.15	-1.35	-1.20	-1.15	-1.30	-1.25
	0.2	-1.70	-0.95	-1.05	-1.10	-1.05	-1.30	-1.10	-1.05	-1.25	-1.20
	0.3	-1.60	-0.90	-1.00	-1.05	-1.00	-1.25	-1.05	-1.00	-1.20	-1.15
	0.4	-1.50	-0.85	-0.95	-1.00	-0.95	-1.20	-0.90	-0.85	-1.15	-1.10
	0.5	-1.40	-0.80	-0.90	-0.95	-0.90	-1.15	-0.85	-0.80	-1.10	-1.05
	0.6	-1.30	-0.75	-0.85	-0.90	-0.85	-1.10	-0.80	-0.75	-1.05	-1.00
	0.7	-1.20	-0.70	-0.80	-0.85	-0.80	-1.05	-0.75	-0.70	-1.00	-0.95
	0.8	-1.10	-0.65	-0.75	-0.80	-0.75	-1.00	-0.70	-0.65	-0.95	-0.90
	0.9	-1.00	-0.60	-0.70	-0.75	-0.70	-0.95	-0.65	-0.60	-0.85	-0.80
	1.0	-0.90	-0.55	-0.65	-0.70	-0.65	-0.90	-0.60	-0.55	-0.75	-0.70
E	0.1	-1.80	-1.00	-1.15	-1.20	-1.15	-1.35	-1.20	-1.15	-1.30	-1.25
	0.2	-1.70	-0.95	-1.05	-1.10	-1.05	-1.30	-1.10	-1.05	-1.25	-1.20
	0.3	-1.60	-0.90	-1.00	-1.05	-1.00	-1.25	-1.05	-1.00	-1.20	-1.15
	0.4	-1.50	-0.85	-0.95	-1.00	-0.95	-1.20	-0.90	-0.85	-1.15	-1.10
	0.5	-1.40	-0.80	-0.90	-0.95	-0.90	-1.15	-0.85	-0.80	-1.10	-1.05
	0.6	-1.30	-0.75	-0.85	-0.90	-0.85	-1.10	-0.80	-0.75	-1.05	-1.00
	0.7	-1.20	-0.70	-0.80	-0.85	-0.80	-1.05	-0.75	-0.70	-1.00	-0.95
	0.8	-1.10	-0.65	-0.75	-0.80	-0.75	-1.00	-0.70	-0.65	-0.95	-0.90
	0.9	-1.00	-0.60	-0.70	-0.75	-0.70	-0.95	-0.65	-0.60	-0.85	-0.80
	1.0	-0.90	-0.55	-0.65	-0.70	-0.65	-0.90	-0.60	-0.55	-0.75	-0.70
F	0.1	-1.80	-1.00	-1.15	-1.20	-1.15	-1.35	-1.20	-1.15	-1.30	-1.25
	0.2	-1.70	-0.95	-1.05	-1.10	-1.05	-1.30	-1.10	-1.05	-1.25	-1.20
	0.3	-1.60	-0.90	-1.00	-1.05	-1.00	-1.25	-1.05	-1.00	-1.20	-1.15
	0.4	-1.50	-0.85	-0.95	-1.00	-0.95	-1.20	-0.90	-0.85	-1.15	-1.10
	0.5	-1.40	-0.80	-0.90	-0.95	-0.90	-1.15	-0.85	-0.80	-1.10	-1.05
	0.6	-1.30	-0.75	-0.85	-0.90	-0.85	-1.10	-0.80	-0.75	-1.05	-1.00
	0.7	-1.20	-0.70	-0.80	-0.85	-0.80	-1.05	-0.75	-0.70	-1.00	-0.95
	0.8	-1.10	-0.65	-0.75	-0.80	-0.75	-1.00	-0.70	-0.65	-0.95	-0.90
	0.9	-1.00	-0.60	-0.70	-0.75	-0.70	-0.95	-0.65	-0.60	-0.85	-0.80
	1.0	-0.90	-0.55	-0.65	-0.70	-0.65	-0.90	-0.60	-0.55	-0.75	-0.70

NACA

TABLE III.—CONTINUED

(m)  $\delta_a, 10^\circ; \alpha_u, -4^\circ$ .

NACA

TABLE III.— CONTINUED

(n)  $\delta_a, 10^{\circ}; \alpha_u, 0^{\circ}$ .

Station	Per- cent chord	Upper surface						Lower surface					
		Mach number						Mach number					
		0.75	0.80	0.825	0.85	0.875	0.90	0.75	0.80	0.825	0.85	0.875	0.90
A	0	1.14	—	1.18	1.18	1.20	1.21	—	—	—	—	—	—
	2.5	-35	—	-37	-35	-35	-35	-35	-35	-35	-35	-35	-35
	5.0	-32	—	-34	-33	-33	-33	-33	-33	-33	-33	-33	-33
	7.5	-31	—	-33	-32	-32	-32	-32	-32	-32	-32	-32	-32
	10.0	-30	—	-32	-31	-31	-31	-31	-31	-31	-31	-31	-31
	12.5	-29	—	-31	-30	-30	-30	-30	-30	-30	-30	-30	-30
	15.0	-28	—	-30	-29	-29	-29	-29	-29	-29	-29	-29	-29
	17.5	-27	—	-29	-28	-28	-28	-28	-28	-28	-28	-28	-28
	20.0	-26	—	-28	-27	-27	-27	-27	-27	-27	-27	-27	-27
	22.5	-25	—	-27	-26	-26	-26	-26	-26	-26	-26	-26	-26
B	0	1.19	—	1.17	1.16	1.20	1.20	—	—	—	—	—	—
	2.5	-36	—	-38	-36	-36	-36	-36	-36	-36	-36	-36	-36
	5.0	-35	—	-37	-35	-35	-35	-35	-35	-35	-35	-35	-35
	7.5	-34	—	-36	-34	-34	-34	-34	-34	-34	-34	-34	-34
	10.0	-33	—	-35	-33	-33	-33	-33	-33	-33	-33	-33	-33
	12.5	-32	—	-34	-32	-32	-32	-32	-32	-32	-32	-32	-32
	15.0	-31	—	-33	-31	-31	-31	-31	-31	-31	-31	-31	-31
	17.5	-30	—	-32	-30	-30	-30	-30	-30	-30	-30	-30	-30
	20.0	-29	—	-31	-29	-29	-29	-29	-29	-29	-29	-29	-29
	22.5	-28	—	-30	-28	-28	-28	-28	-28	-28	-28	-28	-28
C	0	1.19	—	1.18	1.18	1.20	1.20	—	—	—	—	—	—
	2.5	-36	—	-38	-36	-36	-36	-36	-36	-36	-36	-36	-36
	5.0	-35	—	-37	-35	-35	-35	-35	-35	-35	-35	-35	-35
	7.5	-34	—	-36	-34	-34	-34	-34	-34	-34	-34	-34	-34
	10.0	-33	—	-35	-33	-33	-33	-33	-33	-33	-33	-33	-33
	12.5	-32	—	-34	-32	-32	-32	-32	-32	-32	-32	-32	-32
	15.0	-31	—	-33	-31	-31	-31	-31	-31	-31	-31	-31	-31
	17.5	-30	—	-32	-30	-30	-30	-30	-30	-30	-30	-30	-30
	20.0	-29	—	-31	-29	-29	-29	-29	-29	-29	-29	-29	-29
	22.5	-28	—	-30	-28	-28	-28	-28	-28	-28	-28	-28	-28
D	0	1.19	—	1.17	1.19	1.20	1.20	—	—	—	—	—	—
	2.5	-36	—	-38	-36	-36	-36	-36	-36	-36	-36	-36	-36
	5.0	-35	—	-37	-35	-35	-35	-35	-35	-35	-35	-35	-35
	7.5	-34	—	-36	-34	-34	-34	-34	-34	-34	-34	-34	-34
	10.0	-33	—	-35	-33	-33	-33	-33	-33	-33	-33	-33	-33
	12.5	-32	—	-34	-32	-32	-32	-32	-32	-32	-32	-32	-32
	15.0	-31	—	-33	-31	-31	-31	-31	-31	-31	-31	-31	-31
	17.5	-30	—	-32	-30	-30	-30	-30	-30	-30	-30	-30	-30
	20.0	-29	—	-31	-29	-29	-29	-29	-29	-29	-29	-29	-29
	22.5	-28	—	-30	-28	-28	-28	-28	-28	-28	-28	-28	-28
E	0	1.19	—	1.17	1.19	1.20	1.20	—	—	—	—	—	—
	2.5	-36	—	-38	-36	-36	-36	-36	-36	-36	-36	-36	-36
	5.0	-35	—	-37	-35	-35	-35	-35	-35	-35	-35	-35	-35
	7.5	-34	—	-36	-34	-34	-34	-34	-34	-34	-34	-34	-34
	10.0	-33	—	-35	-33	-33	-33	-33	-33	-33	-33	-33	-33
	12.5	-32	—	-34	-32	-32	-32	-32	-32	-32	-32	-32	-32
	15.0	-31	—	-33	-31	-31	-31	-31	-31	-31	-31	-31	-31
	17.5	-30	—	-32	-30	-30	-30	-30	-30	-30	-30	-30	-30
	20.0	-29	—	-31	-29	-29	-29	-29	-29	-29	-29	-29	-29
	22.5	-28	—	-30	-28	-28	-28	-28	-28	-28	-28	-28	-28
F	0	1.19	—	1.17	1.19	1.20	1.20	—	—	—	—	—	—
	2.5	-36	—	-38	-36	-36	-36	-36	-36	-36	-36	-36	-36
	5.0	-35	—	-37	-35	-35	-35	-35	-35	-35	-35	-35	-35
	7.5	-34	—	-36	-34	-34	-34	-34	-34	-34	-34	-34	-34
	10.0	-33	—	-35	-33	-33	-33	-33	-33	-33	-33	-33	-33
	12.5	-32	—	-34	-32	-32	-32	-32	-32	-32	-32	-32	-32
	15.0	-31	—	-33	-31	-31	-31	-31	-31	-31	-31	-31	-31
	17.5	-30	—	-32	-30	-30	-30	-30	-30	-30	-30	-30	-30
	20.0	-29	—	-31	-29	-29	-29	-29	-29	-29	-29	-29	-29
	22.5	-28	—	-30	-28	-28	-28	-28	-28	-28	-28	-28	-28



TABLE III.—CONTINUED

(o)  $\delta_8, 10^\circ; \alpha_u, 4^\circ$ .

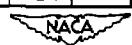


TABLE III.—CONTINUED

(p)  $\delta_a, 15^\circ; \alpha_u, -4^\circ$ .



TABLE III.—CONTINUED

(q)  $\delta_a, 15^\circ; \alpha_u, 0^\circ$ .

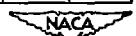


TABLE III.— CONCLUDED

(r)  $\delta_a, 15^\circ; \alpha_u, 4^\circ$ .

Station	Per- cent chord	Upper surface						Lower surface					
		Mach number						Mach number					
		0.75	0.80	0.825	0.85	0.875	0.90	0.75	0.80	0.825	0.85	0.875	0.90
A	0	-0.89						-0.49					
	2.3	-1.03						-0.53					
	4.6	-1.13						-0.58					
	6.9	-1.17						-0.62					
	9.2	-1.21						-0.65					
	11.5	-1.25						-0.68					
	13.7	-1.28						-0.71					
	16.0	-1.31						-0.74					
	18.3	-1.33						-0.76					
	21.5	-1.29						-0.78					
	23.7	-1.26						-0.80					
	26.0	-1.21						-0.82					
	28.2	-1.16						-0.84					
	31.4	-1.19						-0.86					
	33.6	-0.99						-0.88					
	37.2	--						-0.90					
B	0	-0.71						-0.41					
	2.3	-1.28						-0.55					
	4.6	-1.32						-0.59					
	6.9	-1.35						-0.63					
	9.2	-1.37						-0.66					
	11.5	-1.39						-0.69					
	13.7	-1.40						-0.71					
	16.0	-1.35						-0.74					
	18.3	-1.32						-0.76					
	21.5	-1.27						-0.78					
	23.7	-1.23						-0.80					
	26.0	-1.18						-0.82					
	28.2	-1.13						-0.84					
	31.4	-1.08						-0.86					
	33.6	-1.03						-0.88					
	37.2	-0.98						-0.90					
C	0	-0.84						-0.46					
	2.3	-1.06						-0.50					
	4.6	-1.10						-0.54					
	6.9	-1.13						-0.57					
	9.2	-1.15						-0.60					
	11.5	-1.17						-0.63					
	13.7	-1.19						-0.66					
	16.0	-1.21						-0.69					
	18.3	-1.23						-0.71					
	21.5	-1.25						-0.74					
	23.7	-1.27						-0.76					
	26.0	-1.22						-0.78					
	28.2	-1.17						-0.80					
	31.4	-1.12						-0.82					
	33.6	-1.07						-0.84					
	37.2	-0.92						-0.86					
D	0	-0.81						-0.44					
	2.3	-1.04						-0.51					
	4.6	-1.08						-0.55					
	6.9	-1.11						-0.58					
	9.2	-1.13						-0.61					
	11.5	-1.15						-0.64					
	13.7	-1.17						-0.67					
	16.0	-1.19						-0.70					
	18.3	-1.21						-0.73					
	21.5	-1.23						-0.76					
	23.7	-1.25						-0.78					
	26.0	-1.20						-0.80					
	28.2	-1.15						-0.82					
	31.4	-1.10						-0.84					
	33.6	-0.95						-0.86					
	37.2	-0.90						-0.88					
E	0	-0.90						-0.55					
	2.3	-1.25						-0.61					
	4.6	-1.29						-0.65					
	6.9	-1.32						-0.68					
	9.2	-1.35						-0.71					
	11.5	-1.37						-0.74					
	13.7	-1.39						-0.77					
	16.0	-1.34						-0.80					
	18.3	-1.36						-0.83					
	21.5	-1.31						-0.86					
	23.7	-1.33						-0.89					
	26.0	-1.28						-0.91					
	28.2	-1.23						-0.93					
	31.4	-1.18						-0.95					
	33.6	-1.13						-0.97					
	37.2	-0.98						-0.99					
F	0	-0.91						-0.56					
	2.3	-1.26						-0.62					
	4.6	-1.30						-0.66					
	6.9	-1.33						-0.69					
	9.2	-1.36						-0.72					
	11.5	-1.38						-0.75					
	13.7	-1.40						-0.78					
	16.0	-1.35						-0.81					
	18.3	-1.37						-0.84					
	21.5	-1.32						-0.87					
	23.7	-1.34						-0.90					
	26.0	-1.29						-0.92					
	28.2	-1.24						-0.94					
	31.4	-1.19						-0.96					
	33.6	-1.14						-0.98					
	37.2	-0.99						-0.99					
G	0	-0.90						-0.55					
	2.3	-1.25						-0.61					
	4.6	-1.29						-0.65					
	6.9	-1.32						-0.68					
	9.2	-1.35						-0.71					
	11.5	-1.37						-0.74					
	13.7	-1.39						-0.77					
	16.0	-1.34						-0.80					
	18.3	-1.36						-0.83					
	21.5	-1.31						-0.86					
	23.7	-1.33						-0.89					
	26.0	-1.28						-0.91					
	28.2	-1.23						-0.93					
	31.4	-1.18						-0.95					
	33.6	-1.13						-0.97					
	37.2	-0.98						-0.99					



TABLE IV.- PRESSURE COEFFICIENTS FOR THE WING SWEEP BACK 45°

(a)  $\delta_a, 0^\circ; \alpha_u, -4^\circ$ .

Station	Percent chord	Upper surface							Lower surface						
		Mach number							Mach number						
		0.75	0.80	0.825	0.85	0.875	0.90	0.925	0.75	0.80	0.825	0.85	0.875	0.90	0.925
A	0	0.31	0.38	0.34	0.35	0.37	0.40	0.42	-	-	-	-	-	-	-
	2.3	-0.05	-0.10	-0.14	-0.15	-0.11	-0.11	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15
	4.6	-0.11	-0.10	-0.16	-0.18	-0.11	-0.11	-0.16	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15
	6.9	-0.09	-0.08	-0.14	-0.16	-0.07	-0.07	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	9.2	-0.08	-0.07	-0.14	-0.16	-0.06	-0.06	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	11.5	-0.07	-0.06	-0.14	-0.16	-0.05	-0.05	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	13.75	-0.06	-0.05	-0.14	-0.16	-0.04	-0.04	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	16.0	-0.05	-0.04	-0.14	-0.16	-0.03	-0.03	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	18.35	-0.05	-0.04	-0.14	-0.16	-0.03	-0.03	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	20.6	-0.05	-0.04	-0.14	-0.16	-0.03	-0.03	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
B	0	0.31	0.38	0.34	0.35	0.37	0.40	0.42	-	-	-	-	-	-	-
	2.3	-0.05	-0.10	-0.14	-0.15	-0.11	-0.11	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15
	4.6	-0.11	-0.10	-0.16	-0.18	-0.11	-0.11	-0.16	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15
	6.9	-0.09	-0.08	-0.14	-0.16	-0.07	-0.07	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	9.2	-0.08	-0.07	-0.14	-0.16	-0.06	-0.06	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	11.5	-0.07	-0.06	-0.14	-0.16	-0.05	-0.05	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	13.75	-0.07	-0.06	-0.14	-0.16	-0.05	-0.05	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	16.0	-0.07	-0.06	-0.14	-0.16	-0.05	-0.05	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	18.35	-0.07	-0.06	-0.14	-0.16	-0.05	-0.05	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
	20.6	-0.07	-0.06	-0.14	-0.16	-0.05	-0.05	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13	-0.13
C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-

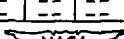


TABLE IV.—CONTINUED

(b)  $\delta_{\alpha}, 0^\circ; \alpha_u, 0^\circ$ .



TABLE IV.—CONTINUED

(c)  $\delta_a, 0^\circ; \alpha_u, 4^\circ$ .

Station	Percent chord	Upper surface							Lower surface						
		Mach number							Mach number						
		0.75	0.80	0.825	0.85	0.875	0.90	0.925	0.75	0.80	0.825	0.85	0.875	0.90	0.925
A	0	-0.12	-0.16	-0.19	-0.23	-0.25	-0.27	-0.29	-0.22	-0.26	-0.29	-0.32	-0.35	-0.38	-0.41
	2.5	-0.01	-0.05	-0.08	-0.12	-0.14	-0.16	-0.18	-0.11	-0.15	-0.18	-0.21	-0.24	-0.27	-0.30
	5.0	-0.06	-0.09	-0.12	-0.15	-0.17	-0.19	-0.21	-0.13	-0.17	-0.20	-0.23	-0.26	-0.29	-0.32
	7.5	-0.02	-0.05	-0.08	-0.11	-0.13	-0.15	-0.17	-0.10	-0.14	-0.17	-0.20	-0.23	-0.26	-0.29
	10.0	-0.04	-0.07	-0.10	-0.13	-0.15	-0.17	-0.19	-0.12	-0.16	-0.19	-0.22	-0.25	-0.28	-0.31
	12.5	-0.03	-0.06	-0.09	-0.12	-0.14	-0.16	-0.18	-0.11	-0.15	-0.18	-0.21	-0.24	-0.27	-0.30
	15.0	-0.02	-0.05	-0.08	-0.11	-0.13	-0.15	-0.17	-0.10	-0.14	-0.17	-0.20	-0.23	-0.26	-0.29
	17.5	-0.01	-0.04	-0.07	-0.10	-0.12	-0.14	-0.16	-0.09	-0.13	-0.16	-0.19	-0.22	-0.25	-0.28
	20.0	-0.01	-0.03	-0.06	-0.09	-0.11	-0.13	-0.15	-0.08	-0.12	-0.15	-0.18	-0.21	-0.24	-0.27
	22.5	-0.01	-0.02	-0.05	-0.08	-0.10	-0.12	-0.14	-0.07	-0.11	-0.14	-0.17	-0.20	-0.23	-0.26
B	0	-0.05	-0.08	-0.11	-0.14	-0.17	-0.20	-0.23	-0.14	-0.18	-0.21	-0.24	-0.27	-0.30	-0.33
	2.5	-0.07	-0.10	-0.13	-0.16	-0.19	-0.22	-0.25	-0.15	-0.19	-0.22	-0.25	-0.28	-0.31	-0.34
	5.0	-0.02	-0.05	-0.08	-0.11	-0.14	-0.17	-0.20	-0.12	-0.16	-0.19	-0.22	-0.25	-0.28	-0.31
	7.5	-0.04	-0.07	-0.10	-0.13	-0.16	-0.19	-0.22	-0.13	-0.17	-0.20	-0.23	-0.26	-0.29	-0.32
	10.0	-0.03	-0.06	-0.09	-0.12	-0.15	-0.18	-0.21	-0.12	-0.16	-0.19	-0.22	-0.25	-0.28	-0.31
	12.5	-0.02	-0.05	-0.08	-0.11	-0.14	-0.17	-0.20	-0.11	-0.15	-0.18	-0.21	-0.24	-0.27	-0.30
	15.0	-0.01	-0.04	-0.07	-0.10	-0.13	-0.16	-0.19	-0.10	-0.14	-0.17	-0.20	-0.23	-0.26	-0.29
	17.5	-0.01	-0.02	-0.05	-0.08	-0.11	-0.14	-0.17	-0.09	-0.13	-0.16	-0.19	-0.22	-0.25	-0.28
	20.0	-0.01	-0.02	-0.05	-0.08	-0.11	-0.14	-0.17	-0.08	-0.12	-0.15	-0.18	-0.21	-0.24	-0.27
	22.5	-0.01	-0.01	-0.04	-0.07	-0.10	-0.13	-0.16	-0.07	-0.11	-0.14	-0.17	-0.20	-0.23	-0.26
C	0	-0.08	-0.11	-0.14	-0.17	-0.20	-0.23	-0.26	-0.15	-0.19	-0.22	-0.25	-0.28	-0.31	-0.34
	2.5	-0.10	-0.13	-0.16	-0.19	-0.22	-0.25	-0.28	-0.16	-0.20	-0.23	-0.26	-0.29	-0.32	-0.35
	5.0	-0.03	-0.06	-0.09	-0.12	-0.15	-0.18	-0.21	-0.13	-0.17	-0.20	-0.23	-0.26	-0.29	-0.32
	7.5	-0.04	-0.07	-0.10	-0.13	-0.16	-0.19	-0.22	-0.14	-0.18	-0.21	-0.24	-0.27	-0.30	-0.33
	10.0	-0.03	-0.06	-0.09	-0.12	-0.15	-0.18	-0.21	-0.13	-0.17	-0.20	-0.23	-0.26	-0.29	-0.32
	12.5	-0.02	-0.05	-0.08	-0.11	-0.14	-0.17	-0.20	-0.12	-0.16	-0.19	-0.22	-0.25	-0.28	-0.31
	15.0	-0.01	-0.04	-0.07	-0.10	-0.13	-0.16	-0.19	-0.11	-0.15	-0.18	-0.21	-0.24	-0.27	-0.30
	17.5	-0.01	-0.02	-0.05	-0.08	-0.11	-0.14	-0.17	-0.10	-0.14	-0.17	-0.20	-0.23	-0.26	-0.29
	20.0	-0.01	-0.02	-0.05	-0.08	-0.11	-0.14	-0.17	-0.09	-0.13	-0.16	-0.19	-0.22	-0.25	-0.28
	22.5	-0.01	-0.01	-0.04	-0.07	-0.10	-0.13	-0.16	-0.08	-0.12	-0.15	-0.18	-0.21	-0.24	-0.27
D	0	-0.14	-0.18	-0.22	-0.26	-0.30	-0.33	-0.36	-0.24	-0.28	-0.32	-0.36	-0.40	-0.43	-0.47
	2.5	-0.18	-0.22	-0.26	-0.30	-0.34	-0.38	-0.41	-0.28	-0.32	-0.36	-0.40	-0.44	-0.48	-0.52
	5.0	-0.07	-0.10	-0.13	-0.16	-0.20	-0.23	-0.26	-0.19	-0.23	-0.26	-0.30	-0.34	-0.38	-0.42
	7.5	-0.08	-0.11	-0.14	-0.17	-0.21	-0.24	-0.27	-0.20	-0.24	-0.27	-0.31	-0.35	-0.39	-0.43
	10.0	-0.07	-0.10	-0.13	-0.16	-0.20	-0.23	-0.26	-0.19	-0.23	-0.26	-0.30	-0.34	-0.38	-0.42
	12.5	-0.06	-0.09	-0.12	-0.15	-0.19	-0.22	-0.25	-0.18	-0.22	-0.25	-0.29	-0.33	-0.37	-0.41
	15.0	-0.05	-0.08	-0.11	-0.14	-0.18	-0.21	-0.24	-0.17	-0.21	-0.24	-0.28	-0.32	-0.36	-0.40
	17.5	-0.04	-0.07	-0.10	-0.13	-0.17	-0.20	-0.23	-0.16	-0.20	-0.23	-0.27	-0.31	-0.35	-0.39
	20.0	-0.04	-0.07	-0.10	-0.13	-0.17	-0.20	-0.23	-0.15	-0.19	-0.22	-0.26	-0.30	-0.34	-0.38
	22.5	-0.04	-0.07	-0.10	-0.13	-0.17	-0.20	-0.23	-0.14	-0.18	-0.21	-0.25	-0.29	-0.33	-0.37
E	0	-0.15	-0.18	-0.22	-0.26	-0.30	-0.33	-0.36	-0.25	-0.28	-0.32	-0.36	-0.40	-0.43	-0.47
	2.5	-0.19	-0.22	-0.26	-0.30	-0.34	-0.38	-0.41	-0.30	-0.34	-0.38	-0.42	-0.46	-0.50	-0.54
	5.0	-0.08	-0.10	-0.13	-0.16	-0.20	-0.23	-0.26	-0.19	-0.23	-0.26	-0.30	-0.34	-0.38	-0.42
	7.5	-0.09	-0.11	-0.14	-0.17	-0.21	-0.24	-0.27	-0.20	-0.24	-0.27	-0.31	-0.35	-0.39	-0.43
	10.0	-0.08	-0.10	-0.13	-0.16	-0.20	-0.23	-0.26	-0.19	-0.23	-0.26	-0.30	-0.34	-0.38	-0.42
	12.5	-0.07	-0.09	-0.12	-0.15	-0.19	-0.22	-0.25	-0.18	-0.22	-0.25	-0.29	-0.33	-0.37	-0.41
	15.0	-0.06	-0.08	-0.11	-0.14	-0.18	-0.21	-0.24	-0.17	-0.21	-0.24	-0.28	-0.32	-0.36	-0.40
	17.5	-0.05	-0.07	-0.10	-0.13	-0.17	-0.20	-0.23	-0.16	-0.20	-0.23	-0.27	-0.31	-0.35	-0.39
	20.0	-0.05	-0.07	-0.10	-0.13	-0.17	-0.20	-0.23	-0.15	-0.19	-0.22	-0.26	-0.30	-0.34	-0.38
	22.5	-0.05	-0.07	-0.10	-0.13	-0.17	-0.20	-0.23	-0.14	-0.18	-0.21	-0.25	-0.29	-0.33	-0.37
F	0	-0.16	-0.19	-0.23	-0.27	-0.31	-0.34	-0.37	-0.26	-0.29	-0.33	-0.37	-0.41	-0.45	-0.49
	2.5	-0.20	-0.23	-0.27	-0.31	-0.35	-0.38	-0.41	-0.30	-0.33	-0.37	-0.41	-0.45	-0.49	-0.53
	5.0	-0.09	-0.11	-0.14	-0.17	-0.21	-0.24	-0.27	-0.19	-0.23	-0.26	-0.30	-0.34	-0.38	-0.42
	7.5	-0.10	-0.12	-0.15	-0.18	-0.22	-0.25	-0.28	-0.20	-0.24	-0.27	-0.31	-0.35	-0.39	-0.43
	10.0	-0.09	-0.11	-0.14	-0.17	-0.21	-0.24	-0.27	-0.19	-0.23	-0.26	-0.30	-0.34	-0.38	-0.42
	12.5	-0.08	-0.10	-0.13	-0.16	-0.20	-0.23	-0.26	-0.18	-0.22	-0.25	-0.29	-0.33	-0.37	-0.41
	15.0	-0.07	-0.09	-0.12	-0.15	-0.19	-0.22	-0.25	-0.17	-0.21	-0.24	-0.28	-0.32	-0.36	-0.40
	17.5	-0.06	-0.08	-0.11	-0.14	-0.18	-0.21	-0.24	-0.16	-0.20	-0.23	-0.27	-0.31	-0.35	-0.39
	20.0	-0.06	-0.08	-0.11	-0.14	-0.18	-0.21	-0.24	-0.15	-0.19	-0.22	-0.26	-0.30	-0.34	-0.38
	22.5	-0.06	-0.08	-0.11	-0.14	-0.18	-0.21	-0.24	-0.14	-0.18	-0.21	-0.25	-0.29	-0.33	-0.37



TABLE IV. — CONTINUED

(d)  $\delta_a, 2^\circ; \alpha_u, -4^\circ$ .

NACA

TABLE IV — CONTINUED

(e)  $\delta_a, 2^\circ; \alpha_u, 0^\circ$ .



TABLE IV.—CONTINUED

(f)  $\delta_a, 2^\circ; \alpha_u, 4^\circ$ .

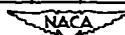


TABLE IV.—CONTINUED

(g)  $\delta_a, 4^\circ; \alpha_u, -4^\circ$ .

Station	Percent chord	Upper surface							Lower surface						
		Mach number							Mach number						
		0.75	0.80	0.825	0.85	0.875	0.90	0.925	0.75	0.80	0.825	0.85	0.875	0.90	0.925
A	0	0.32	0.23	0.35	0.36	0.37	-	-	0.48	-	-	-	-	-	-
	2.3	0.10	0.08	0.10	0.11	0.11	0.12	0.12	0.46	-	-	-	-	-	-
	4.6	0.07	0.06	0.07	0.08	0.08	0.09	0.09	0.45	-	-	-	-	-	-
	6.9	0.03	0.01	0.02	0.03	0.03	0.04	0.04	0.44	-	-	-	-	-	-
	9.2	-0.01	-0.03	-0.04	-0.04	-0.03	-0.03	-0.03	0.43	-	-	-	-	-	-
	11.7	-0.03	-0.05	-0.06	-0.06	-0.05	-0.05	-0.05	0.42	-	-	-	-	-	-
	14.1	-0.06	-0.07	-0.07	-0.06	-0.06	-0.06	-0.06	0.41	-	-	-	-	-	-
	16.5	-0.09	-0.11	-0.10	-0.10	-0.10	-0.10	-0.10	0.40	-	-	-	-	-	-
	18.9	-0.12	-0.14	-0.13	-0.13	-0.13	-0.13	-0.13	0.39	-	-	-	-	-	-
	21.3	-0.15	-0.17	-0.17	-0.17	-0.17	-0.17	-0.17	0.38	-	-	-	-	-	-
B	0	0.47	0.27	0.30	0.31	0.31	0.33	0.33	-	0.58	-	-	-	-	-
	2.3	0.13	0.11	0.12	0.13	0.13	0.14	0.14	0.57	-	-	-	-	-	-
	4.6	0.08	0.06	0.07	0.08	0.08	0.09	0.09	0.56	-	-	-	-	-	-
	6.9	0.04	0.02	0.03	0.03	0.03	0.04	0.04	0.55	-	-	-	-	-	-
	9.2	-0.01	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	0.54	-	-	-	-	-	-
	11.7	-0.03	-0.05	-0.06	-0.06	-0.06	-0.06	-0.06	0.53	-	-	-	-	-	-
	14.1	-0.06	-0.08	-0.09	-0.08	-0.08	-0.08	-0.08	0.52	-	-	-	-	-	-
	16.5	-0.09	-0.11	-0.10	-0.10	-0.10	-0.10	-0.10	0.51	-	-	-	-	-	-
	18.9	-0.07	-0.09	-0.09	-0.08	-0.08	-0.08	-0.08	0.50	-	-	-	-	-	-
	21.3	-0.10	-0.12	-0.11	-0.11	-0.11	-0.11	-0.11	0.49	-	-	-	-	-	-
C	0	0.44	-0.06	0	0.16	0.16	0.18	0.18	0.58	-	-	-	-	-	-
	2.3	0.10	-0.04	0.01	0.02	0.02	0.03	0.03	0.57	-	-	-	-	-	-
	4.6	0.06	-0.02	0.01	0.02	0.02	0.03	0.03	0.56	-	-	-	-	-	-
	6.9	0.02	-0.01	0.01	0.02	0.02	0.03	0.03	0.55	-	-	-	-	-	-
	9.2	-0.03	-0.04	-0.05	-0.05	-0.05	-0.05	-0.05	0.54	-	-	-	-	-	-
	11.7	-0.06	-0.08	-0.08	-0.07	-0.07	-0.07	-0.07	0.53	-	-	-	-	-	-
	14.1	-0.09	-0.11	-0.10	-0.10	-0.10	-0.10	-0.10	0.52	-	-	-	-	-	-
	16.5	-0.10	-0.11	-0.10	-0.10	-0.10	-0.10	-0.10	0.51	-	-	-	-	-	-
	18.9	-0.09	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	0.50	-	-	-	-	-	-
	21.3	-0.11	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	0.49	-	-	-	-	-	-
D	0	0.48	-0.06	0	0.16	0.16	0.18	0.18	0.58	-	-	-	-	-	-
	2.3	0.10	-0.04	0.01	0.02	0.02	0.03	0.03	0.57	-	-	-	-	-	-
	4.6	0.06	-0.02	0.01	0.02	0.02	0.03	0.03	0.56	-	-	-	-	-	-
	6.9	0.02	-0.01	0.01	0.02	0.02	0.03	0.03	0.55	-	-	-	-	-	-
	9.2	-0.03	-0.04	-0.05	-0.05	-0.05	-0.05	-0.05	0.54	-	-	-	-	-	-
	11.7	-0.06	-0.08	-0.08	-0.07	-0.07	-0.07	-0.07	0.53	-	-	-	-	-	-
	14.1	-0.09	-0.11	-0.11	-0.10	-0.10	-0.10	-0.10	0.52	-	-	-	-	-	-
	16.5	-0.10	-0.11	-0.11	-0.10	-0.10	-0.10	-0.10	0.51	-	-	-	-	-	-
	18.9	-0.11	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	0.50	-	-	-	-	-	-
	21.3	-0.13	-0.14	-0.14	-0.14	-0.14	-0.14	-0.14	0.49	-	-	-	-	-	-
E	0	0.49	-0.06	0	0.16	0.16	0.18	0.18	0.58	-	-	-	-	-	-
	2.3	0.10	-0.04	0.01	0.02	0.02	0.03	0.03	0.57	-	-	-	-	-	-
	4.6	0.06	-0.02	0.01	0.02	0.02	0.03	0.03	0.56	-	-	-	-	-	-
	6.9	0.02	-0.01	0.01	0.02	0.02	0.03	0.03	0.55	-	-	-	-	-	-
	9.2	-0.03	-0.04	-0.05	-0.05	-0.05	-0.05	-0.05	0.54	-	-	-	-	-	-
	11.7	-0.06	-0.08	-0.08	-0.07	-0.07	-0.07	-0.07	0.53	-	-	-	-	-	-
	14.1	-0.09	-0.11	-0.11	-0.10	-0.10	-0.10	-0.10	0.52	-	-	-	-	-	-
	16.5	-0.10	-0.11	-0.11	-0.10	-0.10	-0.10	-0.10	0.51	-	-	-	-	-	-
	18.9	-0.11	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	0.50	-	-	-	-	-	-
	21.3	-0.13	-0.14	-0.14	-0.14	-0.14	-0.14	-0.14	0.49	-	-	-	-	-	-
F	0	0.50	-0.06	0	0.16	0.16	0.18	0.18	0.58	-	-	-	-	-	-
	2.3	0.10	-0.04	0.01	0.02	0.02	0.03	0.03	0.57	-	-	-	-	-	-
	4.6	0.06	-0.02	0.01	0.02	0.02	0.03	0.03	0.56	-	-	-	-	-	-
	6.9	0.02	-0.01	0.01	0.02	0.02	0.03	0.03	0.55	-	-	-	-	-	-
	9.2	-0.03	-0.04	-0.05	-0.05	-0.05	-0.05	-0.05	0.54	-	-	-	-	-	-
	11.7	-0.06	-0.08	-0.08	-0.07	-0.07	-0.07	-0.07	0.53	-	-	-	-	-	-
	14.1	-0.09	-0.11	-0.11	-0.10	-0.10	-0.10	-0.10	0.52	-	-	-	-	-	-
	16.5	-0.10	-0.11	-0.11	-0.10	-0.10	-0.10	-0.10	0.51	-	-	-	-	-	-
	18.9	-0.11	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	0.50	-	-	-	-	-	-
	21.3	-0.13	-0.14	-0.14	-0.14	-0.14	-0.14	-0.14	0.49	-	-	-	-	-	-

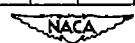


TABLE IV.—CONTINUED

(h)  $\delta_a, 4^\circ; \alpha_u, 0^\circ$ .

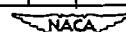


TABLE IV.—CONTINUED

(i)  $\delta_B, 4^\circ$ ;  $\alpha_{11}, 4^\circ$ .

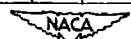


TABLE IV.—CONTINUED

(j)  $\delta_a, 6^\circ; \alpha_u, -4^\circ$ .

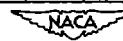


TABLE IV.— CONTINUED

(k)  $\delta_a, 6^\circ; \alpha_u, 0^\circ$ .

Station	Per-cent chord	Upper surface							Lower surface						
		Mech number							Mech number						
		0.75	0.80	0.85	0.89	0.875	0.90	0.925	0.75	0.80	0.85	0.89	0.875	0.90	0.925
A	0	-0.43	0.47	0.49	0.49	0.50	0.49	0.50	-0.43	-0.46	-0.49	-0.49	-0.50	-0.50	-0.50
	2.3	-0.39	-0.40	-0.47	-0.49	-0.50	-0.49	-0.50	-0.38	-0.46	-0.49	-0.49	-0.50	-0.50	-0.50
	4.6	-0.36	-0.36	-0.42	-0.44	-0.45	-0.45	-0.46	-0.36	-0.44	-0.47	-0.47	-0.48	-0.48	-0.48
	6.9	-0.33	-0.33	-0.37	-0.39	-0.40	-0.40	-0.41	-0.33	-0.41	-0.44	-0.44	-0.45	-0.45	-0.45
	9.2	-0.31	-0.31	-0.35	-0.37	-0.38	-0.38	-0.39	-0.31	-0.39	-0.42	-0.42	-0.43	-0.43	-0.43
	11.5	-0.29	-0.29	-0.33	-0.35	-0.36	-0.36	-0.37	-0.29	-0.37	-0.40	-0.40	-0.41	-0.41	-0.41
	13.7	-0.28	-0.28	-0.32	-0.34	-0.35	-0.35	-0.36	-0.28	-0.36	-0.39	-0.39	-0.40	-0.40	-0.40
	16.0	-0.27	-0.27	-0.31	-0.33	-0.34	-0.34	-0.35	-0.27	-0.35	-0.38	-0.38	-0.39	-0.39	-0.39
	18.3	-0.26	-0.26	-0.30	-0.32	-0.33	-0.33	-0.34	-0.26	-0.34	-0.37	-0.37	-0.38	-0.38	-0.38
	20.6	-0.25	-0.25	-0.29	-0.31	-0.32	-0.32	-0.33	-0.25	-0.33	-0.36	-0.36	-0.37	-0.37	-0.37
B	0	-0.43	-0.47	-0.49	-0.49	-0.50	-0.49	-0.50	-0.43	-0.46	-0.49	-0.49	-0.50	-0.50	-0.50
	2.3	-0.37	-0.38	-0.44	-0.46	-0.47	-0.47	-0.48	-0.37	-0.45	-0.48	-0.48	-0.49	-0.49	-0.49
	4.6	-0.34	-0.35	-0.41	-0.43	-0.44	-0.44	-0.45	-0.34	-0.42	-0.45	-0.45	-0.46	-0.46	-0.46
	6.9	-0.32	-0.32	-0.38	-0.40	-0.41	-0.41	-0.42	-0.32	-0.40	-0.43	-0.43	-0.44	-0.44	-0.44
	9.2	-0.30	-0.30	-0.36	-0.38	-0.39	-0.39	-0.40	-0.30	-0.38	-0.41	-0.41	-0.42	-0.42	-0.42
	11.5	-0.29	-0.29	-0.35	-0.37	-0.38	-0.38	-0.39	-0.29	-0.37	-0.40	-0.40	-0.41	-0.41	-0.41
	13.7	-0.28	-0.28	-0.34	-0.36	-0.37	-0.37	-0.38	-0.28	-0.36	-0.39	-0.39	-0.40	-0.40	-0.40
	16.0	-0.27	-0.27	-0.33	-0.35	-0.36	-0.36	-0.37	-0.27	-0.35	-0.38	-0.38	-0.39	-0.39	-0.39
	18.3	-0.26	-0.26	-0.32	-0.34	-0.35	-0.35	-0.36	-0.26	-0.34	-0.37	-0.37	-0.38	-0.38	-0.38
	20.6	-0.25	-0.25	-0.31	-0.33	-0.34	-0.34	-0.35	-0.25	-0.33	-0.36	-0.36	-0.37	-0.37	-0.37
C	0	-0.43	-0.48	-0.50	-0.50	-0.51	-0.50	-0.51	-0.43	-0.48	-0.51	-0.51	-0.52	-0.52	-0.52
	2.3	-0.36	-0.36	-0.42	-0.44	-0.45	-0.45	-0.46	-0.36	-0.41	-0.44	-0.44	-0.45	-0.45	-0.45
	4.6	-0.34	-0.34	-0.40	-0.42	-0.43	-0.43	-0.44	-0.34	-0.39	-0.42	-0.42	-0.43	-0.43	-0.43
	6.9	-0.32	-0.32	-0.38	-0.40	-0.41	-0.41	-0.42	-0.32	-0.37	-0.40	-0.40	-0.41	-0.41	-0.41
	9.2	-0.30	-0.30	-0.36	-0.38	-0.39	-0.39	-0.40	-0.30	-0.35	-0.38	-0.38	-0.39	-0.39	-0.39
	11.5	-0.29	-0.29	-0.35	-0.37	-0.38	-0.38	-0.39	-0.29	-0.34	-0.37	-0.37	-0.38	-0.38	-0.38
	13.7	-0.28	-0.28	-0.34	-0.36	-0.37	-0.37	-0.38	-0.28	-0.33	-0.36	-0.36	-0.37	-0.37	-0.37
	16.0	-0.27	-0.27	-0.33	-0.35	-0.36	-0.36	-0.37	-0.27	-0.32	-0.35	-0.35	-0.36	-0.36	-0.36
	18.3	-0.26	-0.26	-0.32	-0.34	-0.35	-0.35	-0.36	-0.26	-0.31	-0.34	-0.34	-0.35	-0.35	-0.35
	20.6	-0.25	-0.25	-0.31	-0.33	-0.34	-0.34	-0.35	-0.25	-0.30	-0.33	-0.33	-0.34	-0.34	-0.34
D	0	-0.47	-0.47	-0.48	-0.48	-0.49	-0.48	-0.49	-0.47	-0.47	-0.48	-0.48	-0.49	-0.49	-0.49
	2.3	-0.40	-0.41	-0.47	-0.48	-0.49	-0.48	-0.49	-0.40	-0.40	-0.41	-0.41	-0.42	-0.42	-0.42
	4.6	-0.38	-0.39	-0.45	-0.46	-0.47	-0.46	-0.47	-0.38	-0.38	-0.39	-0.39	-0.40	-0.40	-0.40
	6.9	-0.36	-0.37	-0.43	-0.44	-0.45	-0.44	-0.45	-0.36	-0.36	-0.37	-0.37	-0.38	-0.38	-0.38
	9.2	-0.34	-0.35	-0.41	-0.42	-0.43	-0.42	-0.43	-0.34	-0.34	-0.35	-0.35	-0.36	-0.36	-0.36
	11.5	-0.33	-0.34	-0.40	-0.41	-0.42	-0.41	-0.42	-0.33	-0.33	-0.34	-0.34	-0.35	-0.35	-0.35
	13.7	-0.32	-0.33	-0.39	-0.40	-0.41	-0.40	-0.41	-0.32	-0.32	-0.33	-0.33	-0.34	-0.34	-0.34
	16.0	-0.31	-0.32	-0.38	-0.39	-0.40	-0.39	-0.40	-0.31	-0.31	-0.32	-0.32	-0.33	-0.33	-0.33
	18.3	-0.30	-0.31	-0.37	-0.38	-0.39	-0.38	-0.39	-0.30	-0.30	-0.31	-0.31	-0.32	-0.32	-0.32
	20.6	-0.29	-0.30	-0.36	-0.37	-0.38	-0.37	-0.38	-0.29	-0.29	-0.30	-0.30	-0.31	-0.31	-0.31
E	0	-0.43	-0.43	-0.44	-0.44	-0.45	-0.44	-0.45	-0.43	-0.43	-0.44	-0.44	-0.45	-0.45	-0.45
	2.3	-0.36	-0.37	-0.43	-0.44	-0.45	-0.44	-0.45	-0.36	-0.36	-0.37	-0.37	-0.38	-0.38	-0.38
	4.6	-0.34	-0.35	-0.41	-0.42	-0.43	-0.42	-0.43	-0.34	-0.34	-0.35	-0.35	-0.36	-0.36	-0.36
	6.9	-0.32	-0.33	-0.39	-0.40	-0.41	-0.40	-0.41	-0.32	-0.32	-0.33	-0.33	-0.34	-0.34	-0.34
	9.2	-0.30	-0.31	-0.38	-0.39	-0.40	-0.39	-0.40	-0.30	-0.30	-0.31	-0.31	-0.32	-0.32	-0.32
	11.5	-0.29	-0.30	-0.37	-0.38	-0.39	-0.38	-0.39	-0.29	-0.29	-0.30	-0.30	-0.31	-0.31	-0.31
	13.7	-0.28	-0.29	-0.36	-0.37	-0.38	-0.37	-0.38	-0.28	-0.28	-0.29	-0.29	-0.30	-0.30	-0.30
	16.0	-0.27	-0.28	-0.35	-0.36	-0.37	-0.36	-0.37	-0.27	-0.27	-0.28	-0.28	-0.29	-0.29	-0.29
	18.3	-0.26	-0.27	-0.34	-0.35	-0.36	-0.35	-0.36	-0.26	-0.26	-0.27	-0.27	-0.28	-0.28	-0.28
	20.6	-0.25	-0.26	-0.33	-0.34	-0.35	-0.34	-0.35	-0.25	-0.25	-0.26	-0.26	-0.27	-0.27	-0.27
F	0	-0.48	-0.48	-0.49	-0.49	-0.50	-0.49	-0.50	-0.48	-0.48	-0.49	-0.49	-0.50	-0.50	-0.50
	2.3	-0.41	-0.42	-0.48	-0.49	-0.50	-0.49	-0.50	-0.41	-0.41	-0.42	-0.42	-0.43	-0.43	-0.43
	4.6	-0.39	-0.40	-0.46	-0.47	-0.48	-0.47	-0.48	-0.39	-0.39	-0.40	-0.40	-0.41	-0.41	-0.41
	6.9	-0.37	-0.38	-0.44	-0.45	-0.46	-0.45	-0.46	-0.37	-0.37	-0.38	-0.38	-0.39	-0.39	-0.39
	9.2	-0.35	-0.36	-0.42	-0.43	-0.44	-0.43	-0.44	-0.35	-0.35	-0.36	-0.36	-0.37	-0.37	-0.37
	11.5	-0.34	-0.35	-0.41	-0.42	-0.43	-0.42	-0.43	-0.34	-0.34	-0.35	-0.35	-0.36	-0.36	-0.36
	13.7	-0.33	-0.34	-0.39	-0.40	-0.41	-0.40	-0.41	-0.33	-0.33	-0.34	-0.34	-0.35	-0.35	-0.35
	16.0	-0.32	-0.33	-0.38	-0.39	-0.40	-0.39	-0.40	-0.32	-0.32	-0.33	-0.33	-0.34	-0.34	-0.34
	18.3	-0.31	-0.32	-0.37	-0.38	-0.39	-0.38	-0.39	-0.31	-0.31	-0.32	-0.32	-0.33	-0.33	-0.33
	20.6	-0.30	-0.31	-0.36	-0.37	-0.38	-0.37	-0.38	-0.30	-0.30	-0.31	-0.31	-0.32	-0.32	-0.32

NACA

TABLE IV.- CONTINUED

(1)  $\delta_a, 6^\circ; \alpha_u, 4^\circ$ .

Station	Percent chord	Upper surface							Lower surface						
		Mach number							Mach number						
		0.75	0.80	0.85	0.89	0.91	0.93	0.95	0.75	0.80	0.85	0.89	0.91	0.93	0.95
A	0	0.13	0.17	0.18	0.22	0.23	0.26	0.31	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	31.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	34.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	31.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	31.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	31.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	31.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	28.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	31.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-

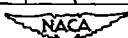


TABLE IV.—CONTINUED

(m)  $\delta_a, 10^\circ; \alpha_u, -4^\circ$ .

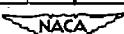
NACA

TABLE IV.—CONTINUED

(n)  $\delta_a, 10^\circ; \alpha_{11}, 0^\circ$ .

TABLE IV.— CONCLUDED

(o)  $\delta_a, 10^\circ; \alpha_u, 4^\circ$ .



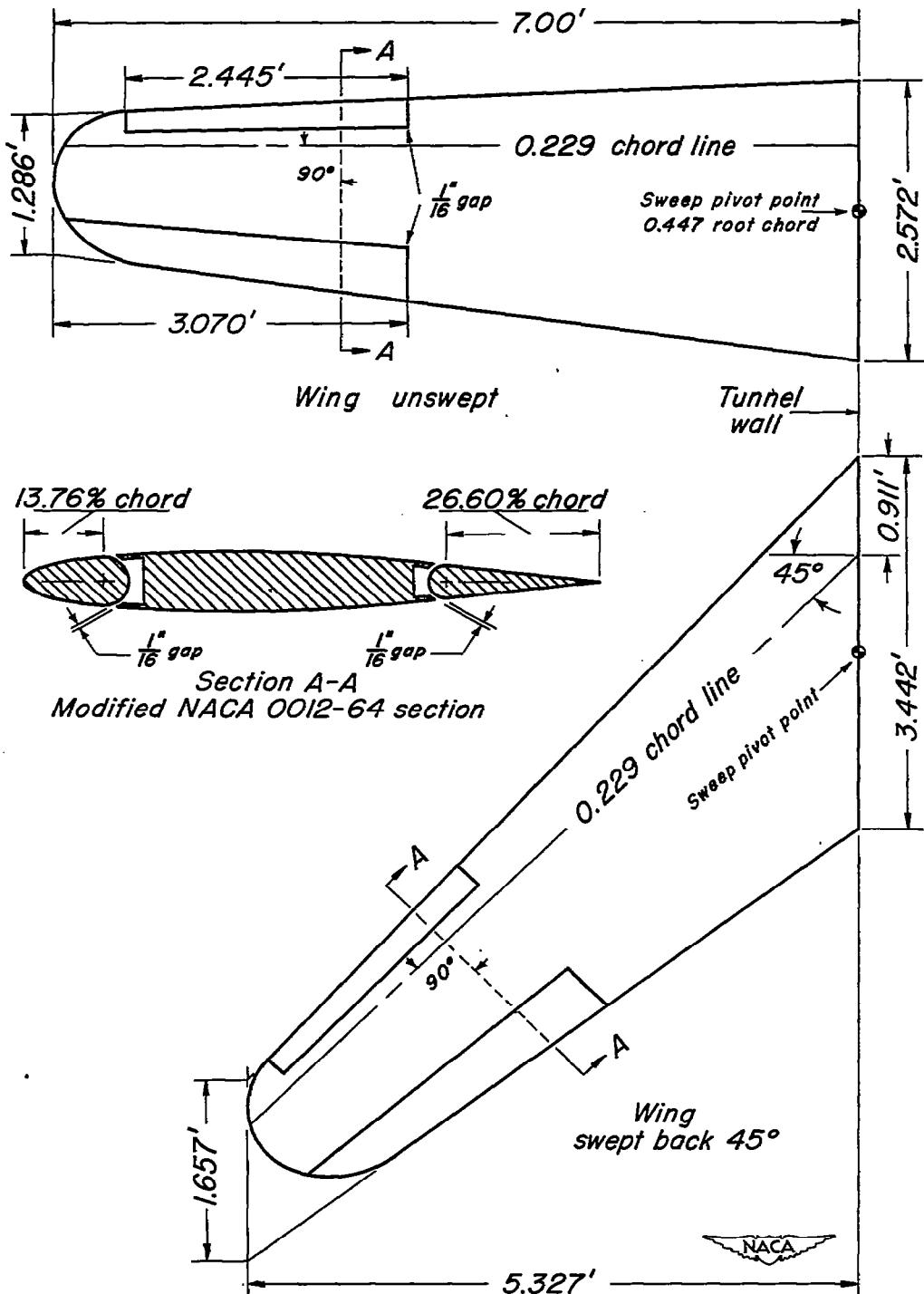


Figure 1.—Geometry of the model.



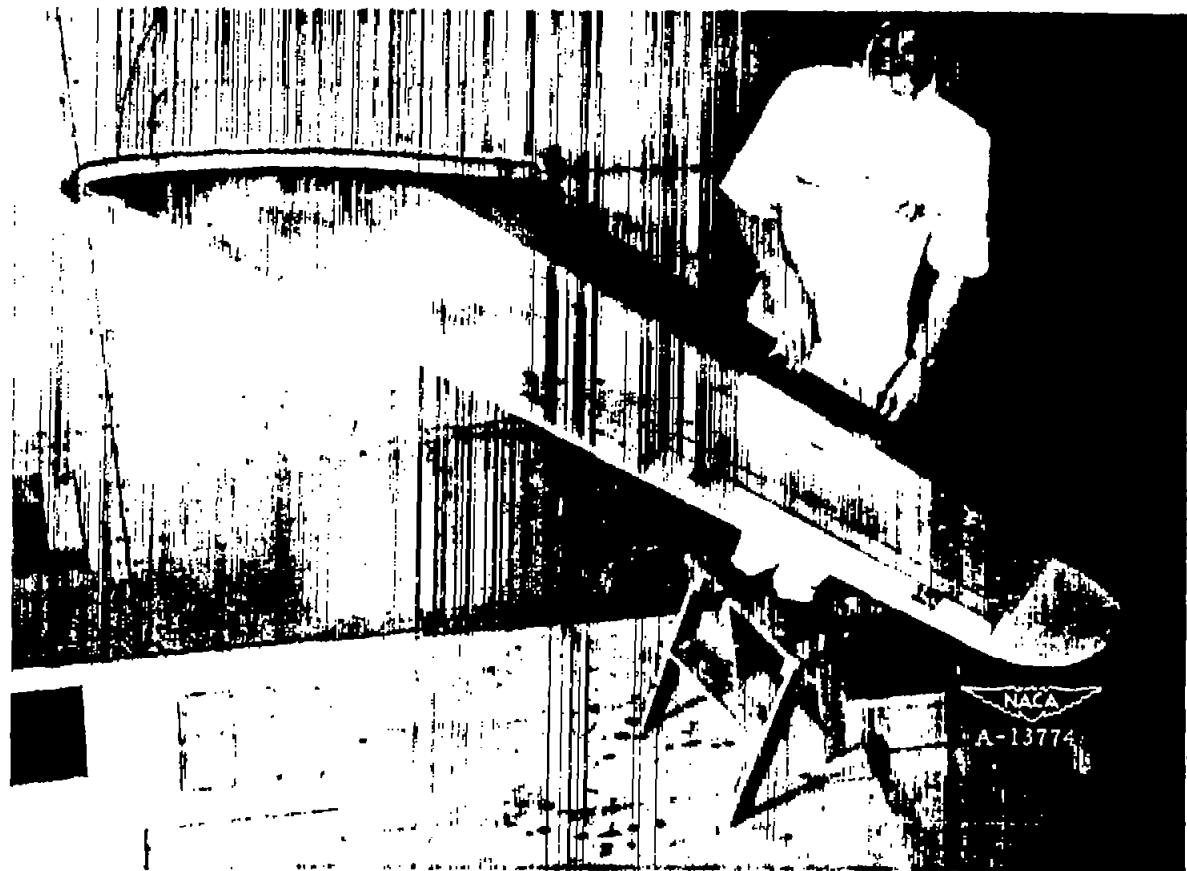
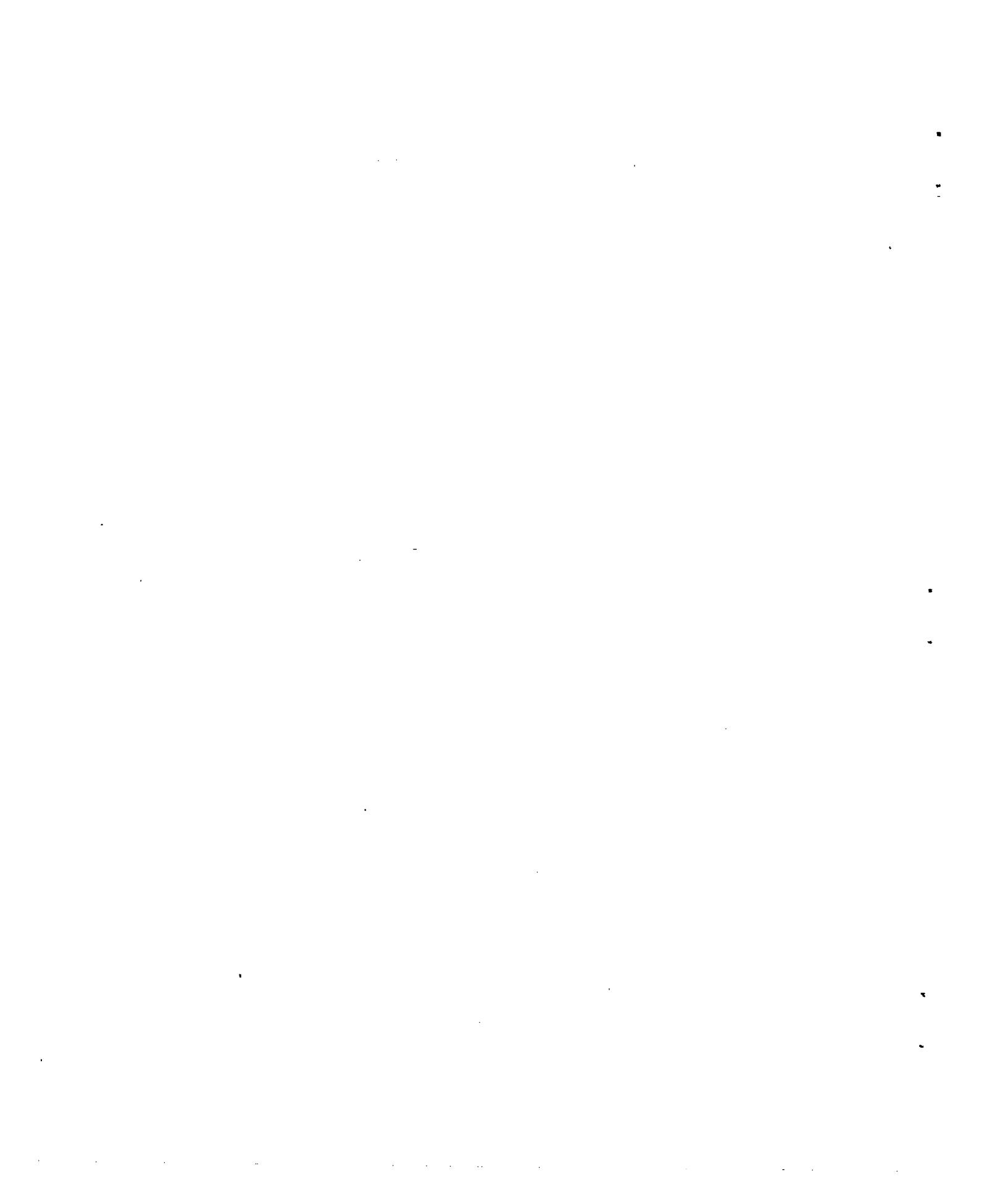


Figure 2.— Model mounting arrangement, wing swept back  $45^{\circ}$ .



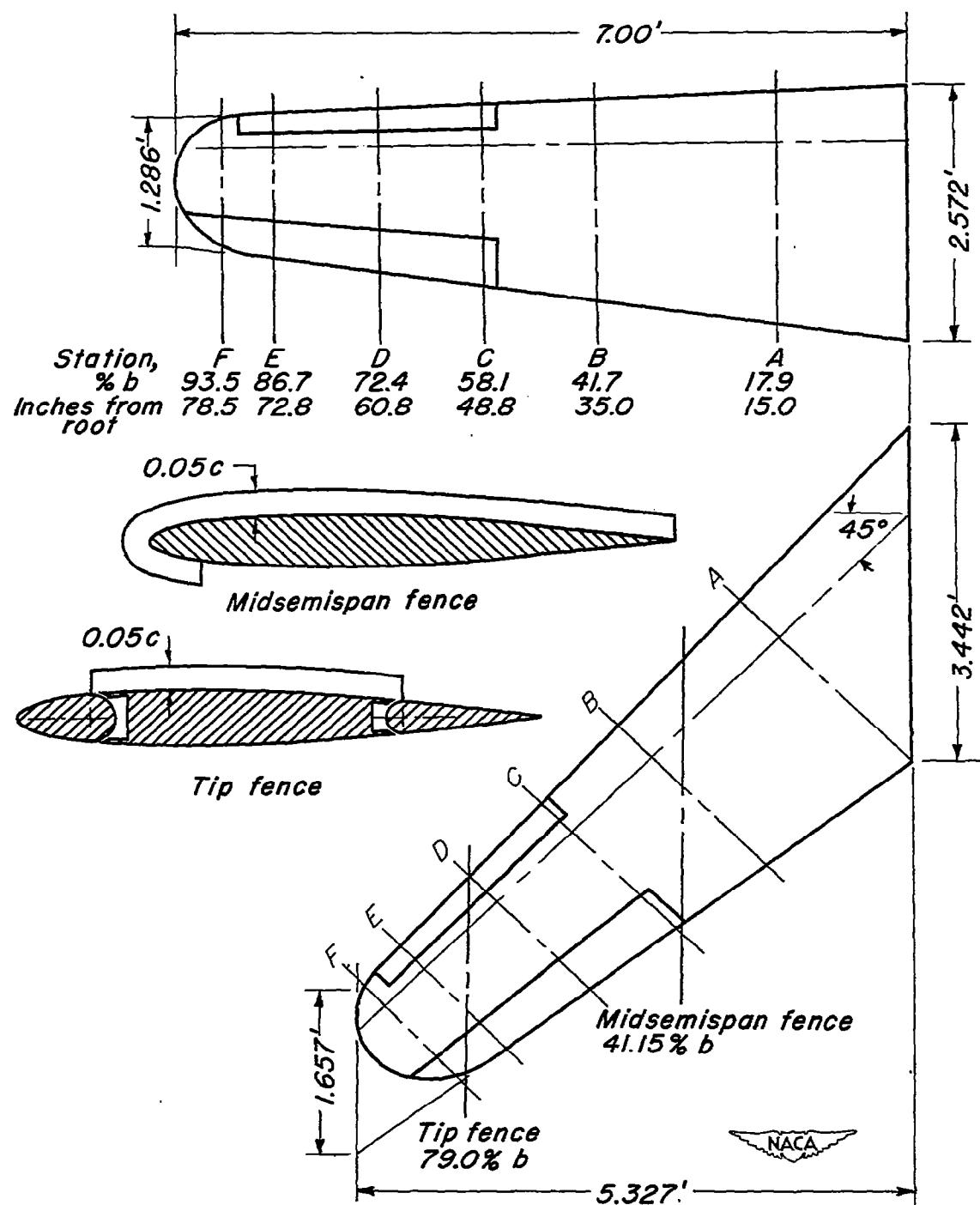


Figure 3.- Location of pressure-orifice stations and fences.

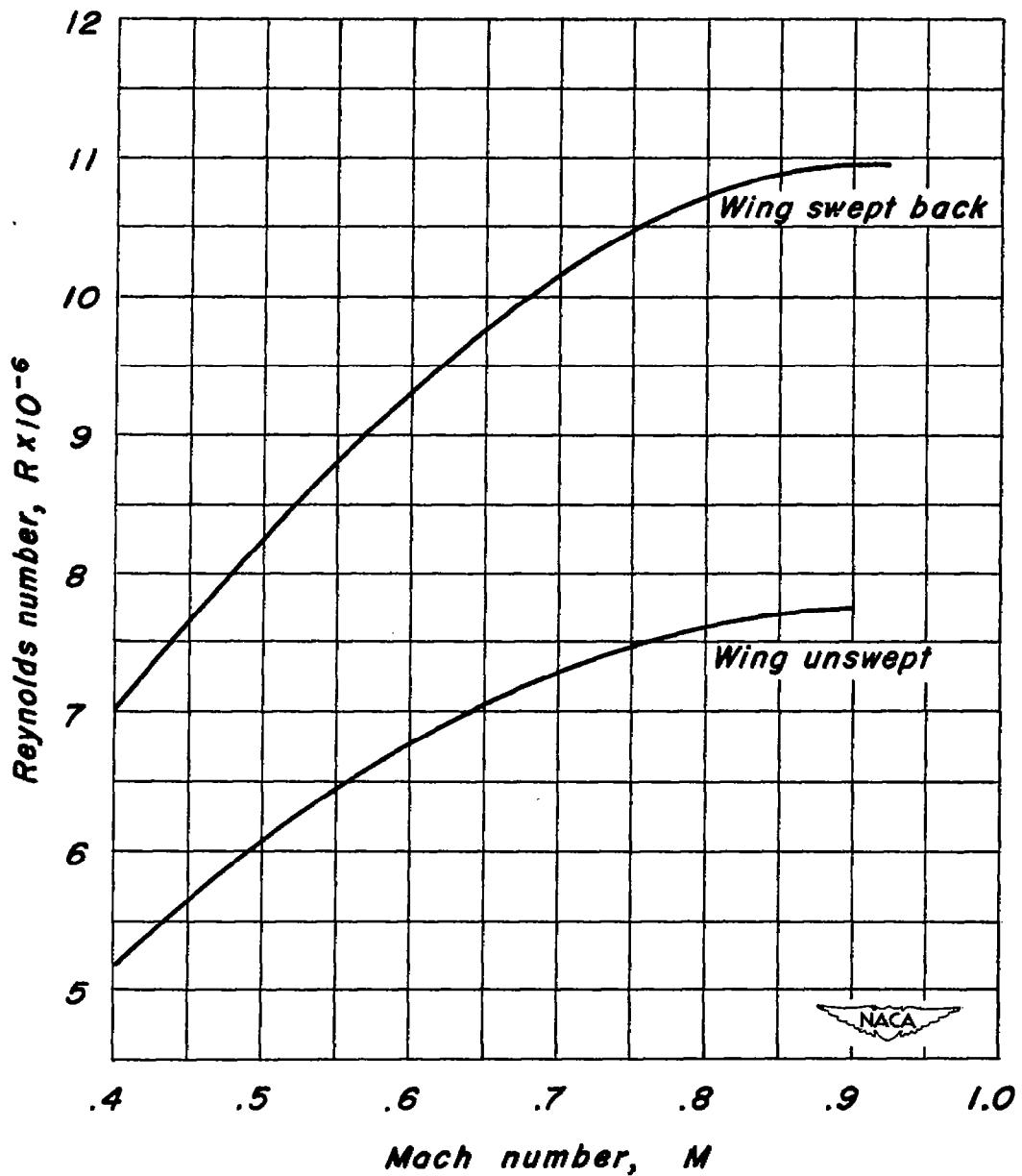


Figure 4.- Variation of Reynolds number with Mach number for the wing unswept and swept back 45°.

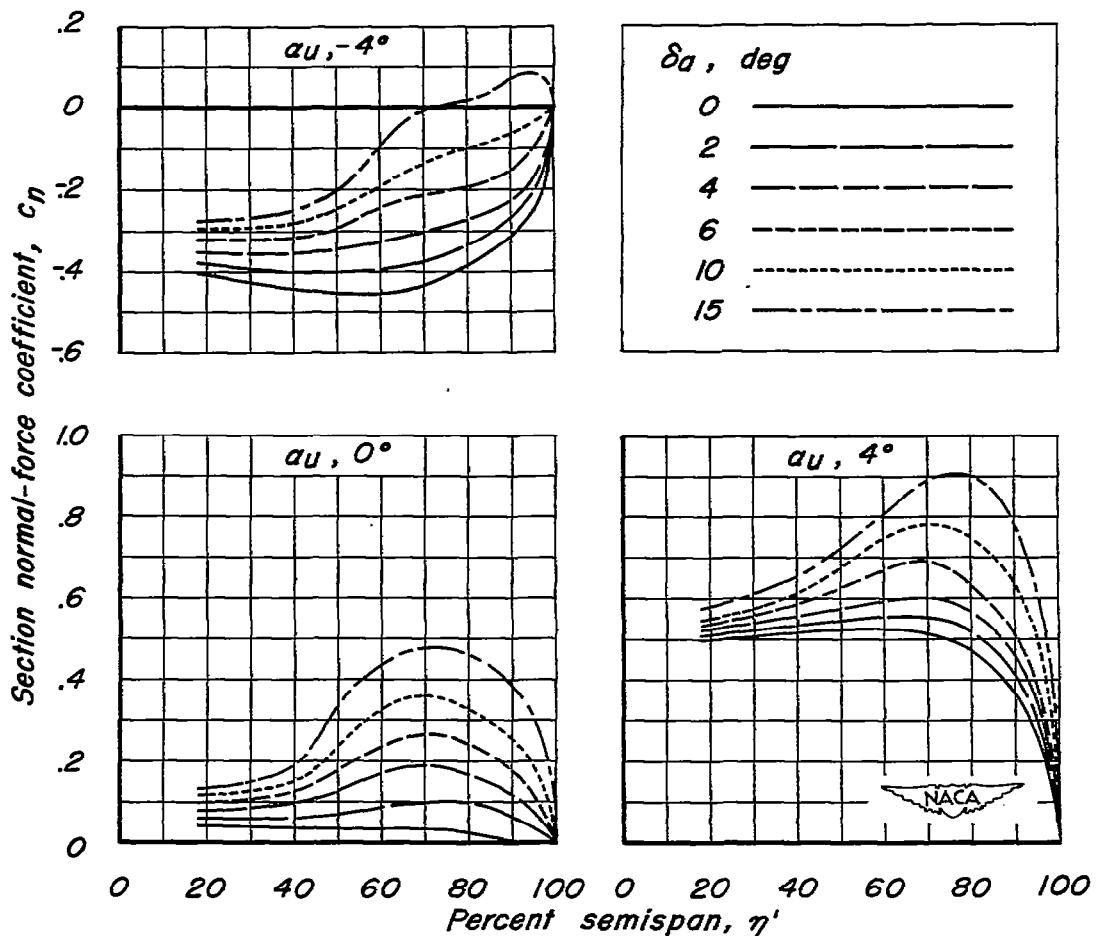
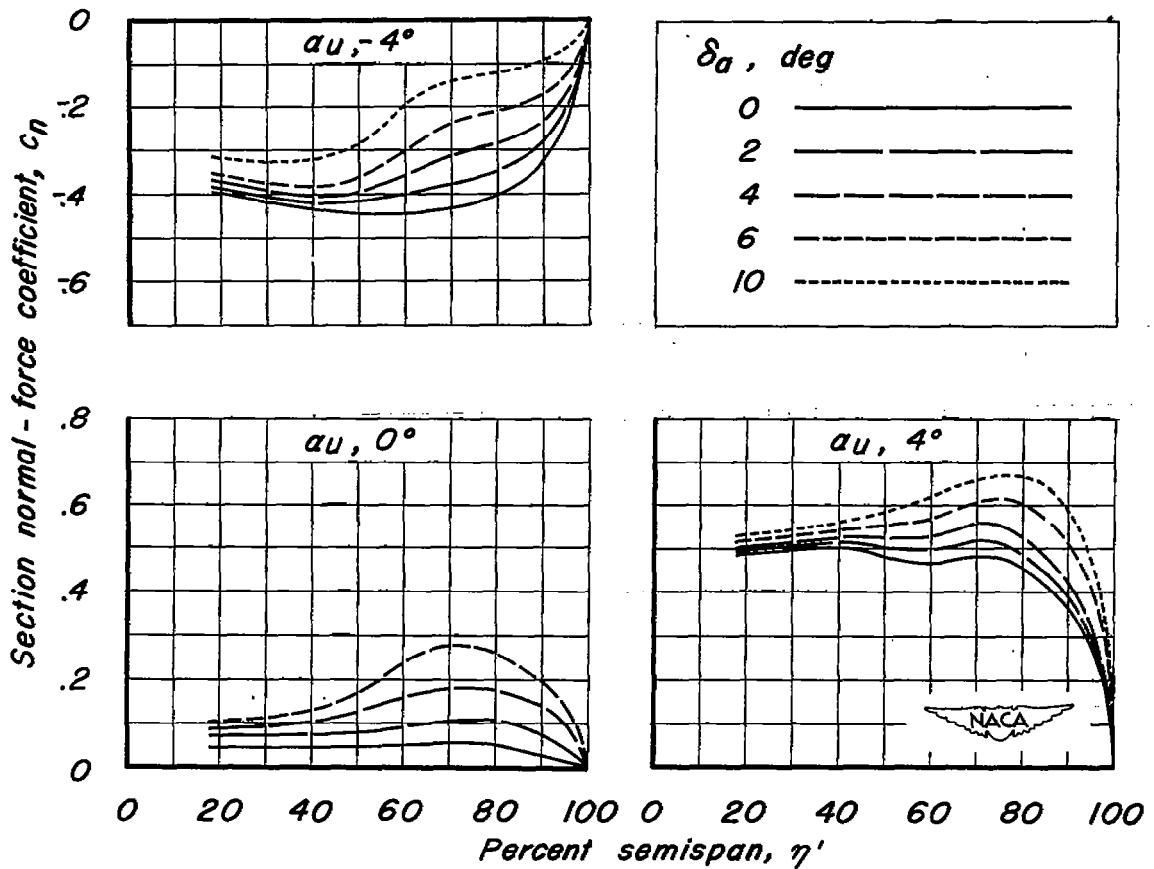
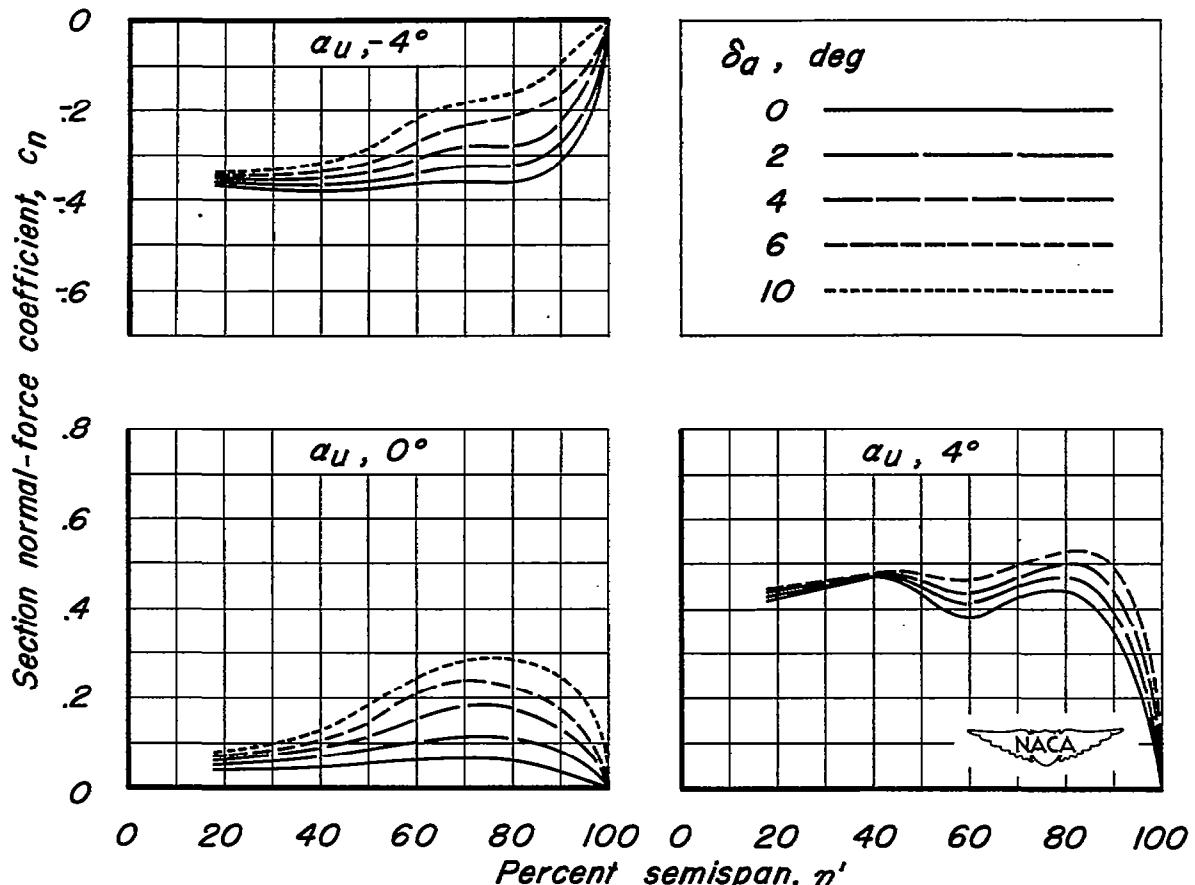
(a)  $M, 0.75$ .

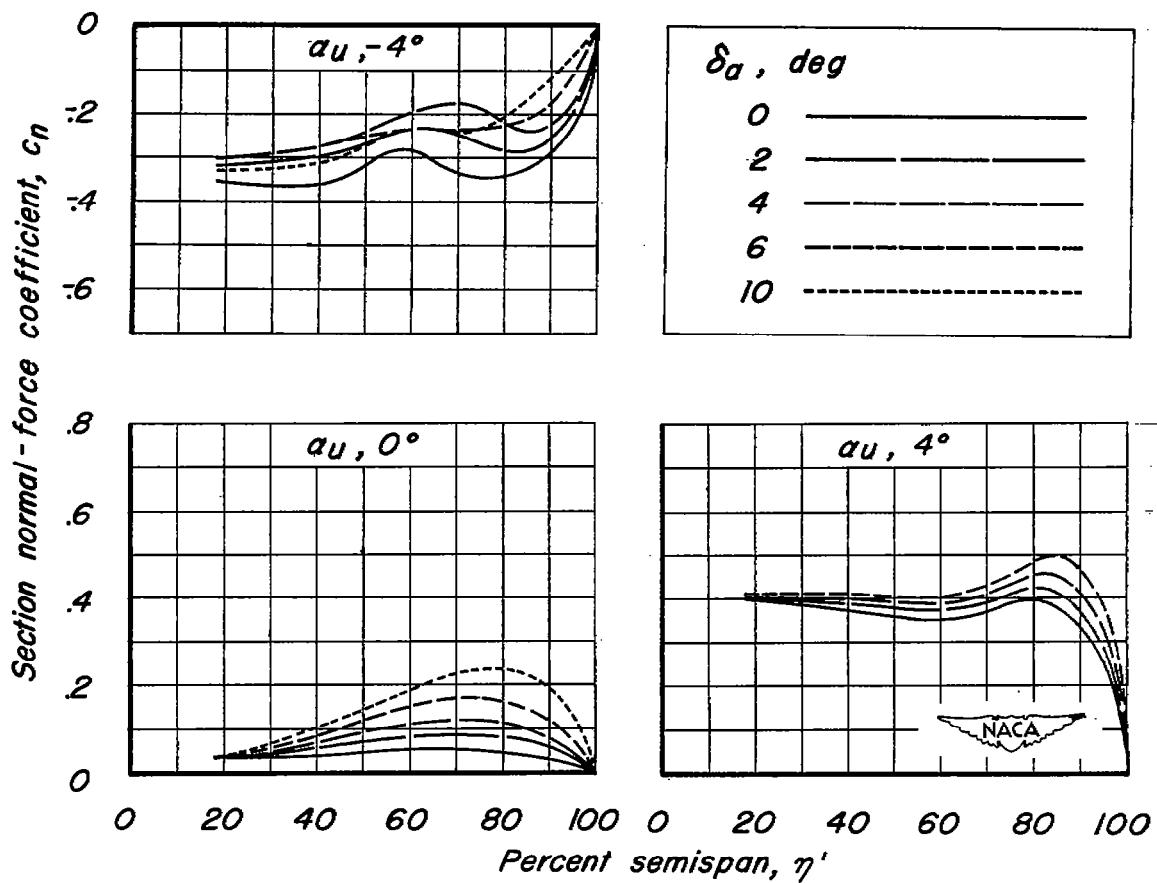
Figure 5.— Spanwise variation of the section normal-force coefficient. Wing unswept.



(b)  $M, 0.80$ .  
Figure 5-Continued.



(c)  $M, 0.825$ .  
Figure 5.-Continued.



(d)  $M, 0.85$ .  
Figure 5-Continued.

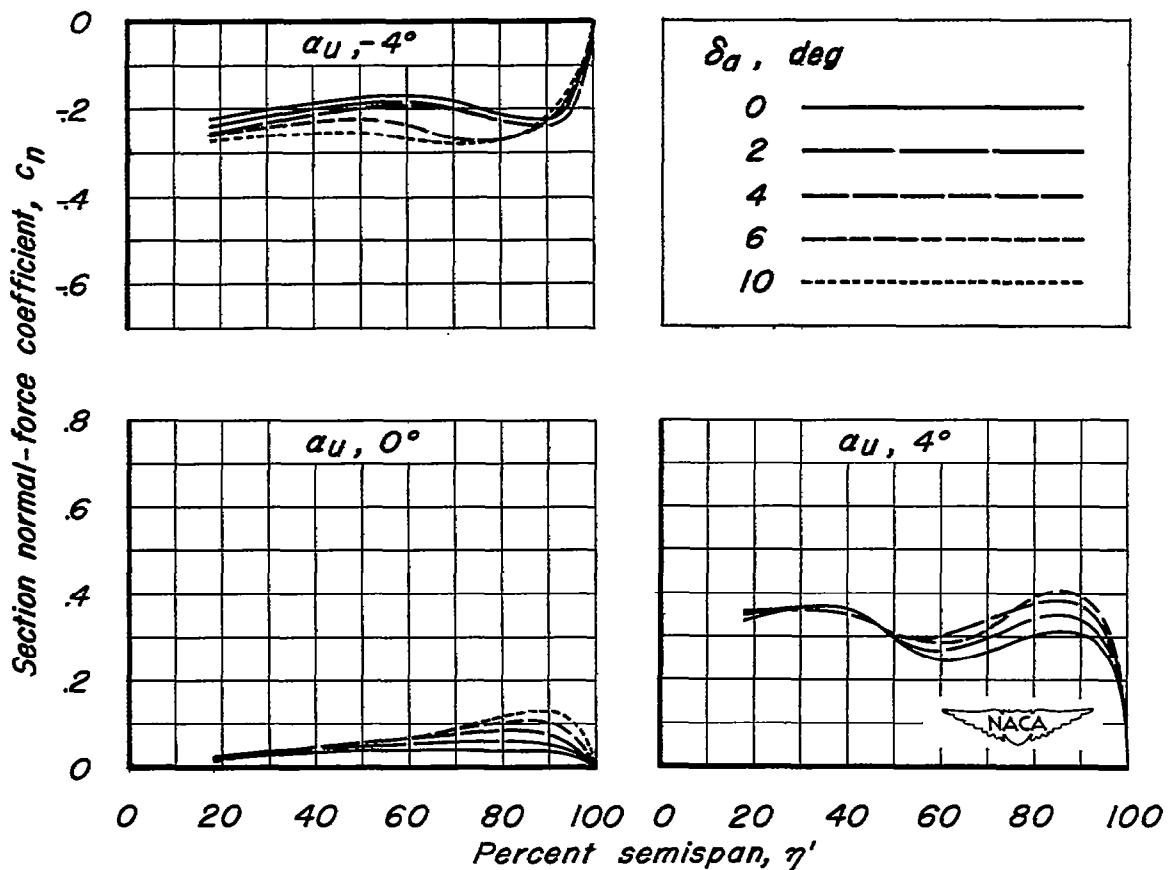
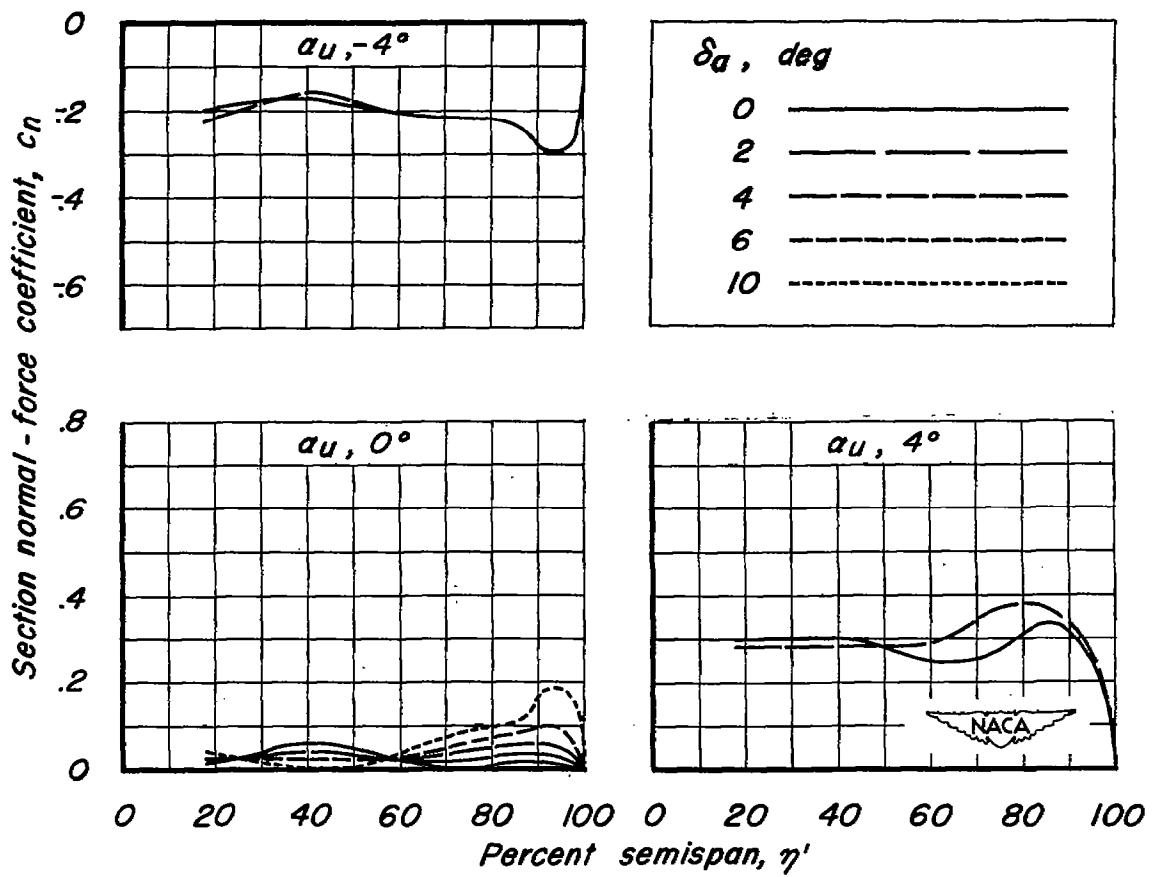
(e)  $M, 0.875$ .

Figure 5.-Continued.



(f)  $M, 0.90$ .  
Figure 5.- Concluded.

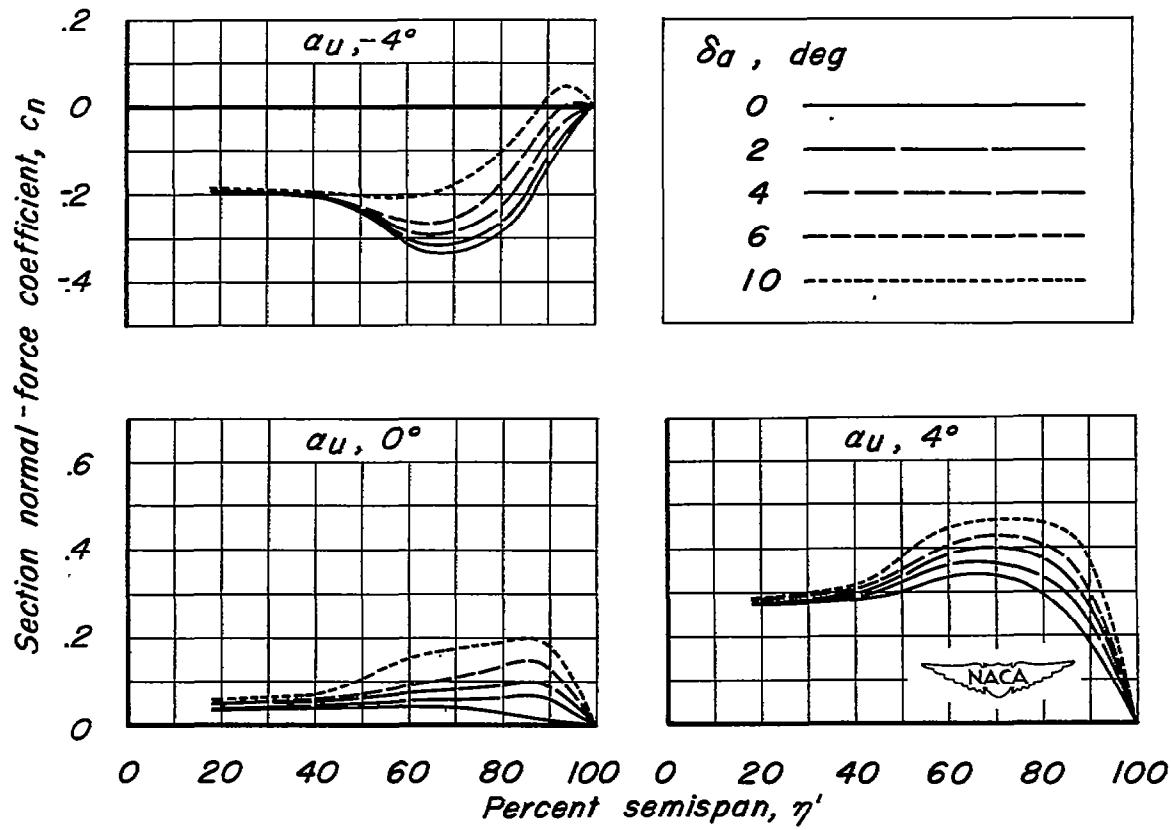
(a)  $M, 0.75$ .

Figure 6.- Spanwise variation of the section normal-force coefficient. Wing swept back  $45^\circ$ .

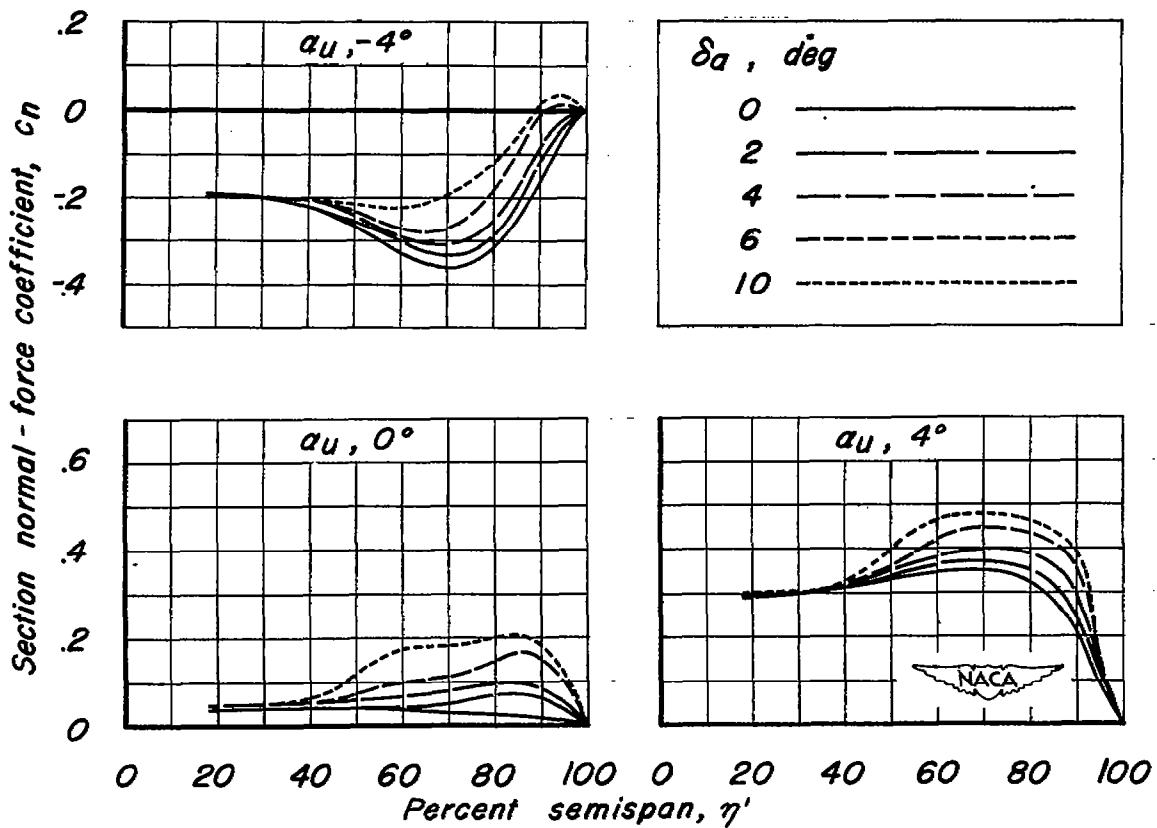
(b)  $M, 0.80$ .

Figure 6.-Continued.

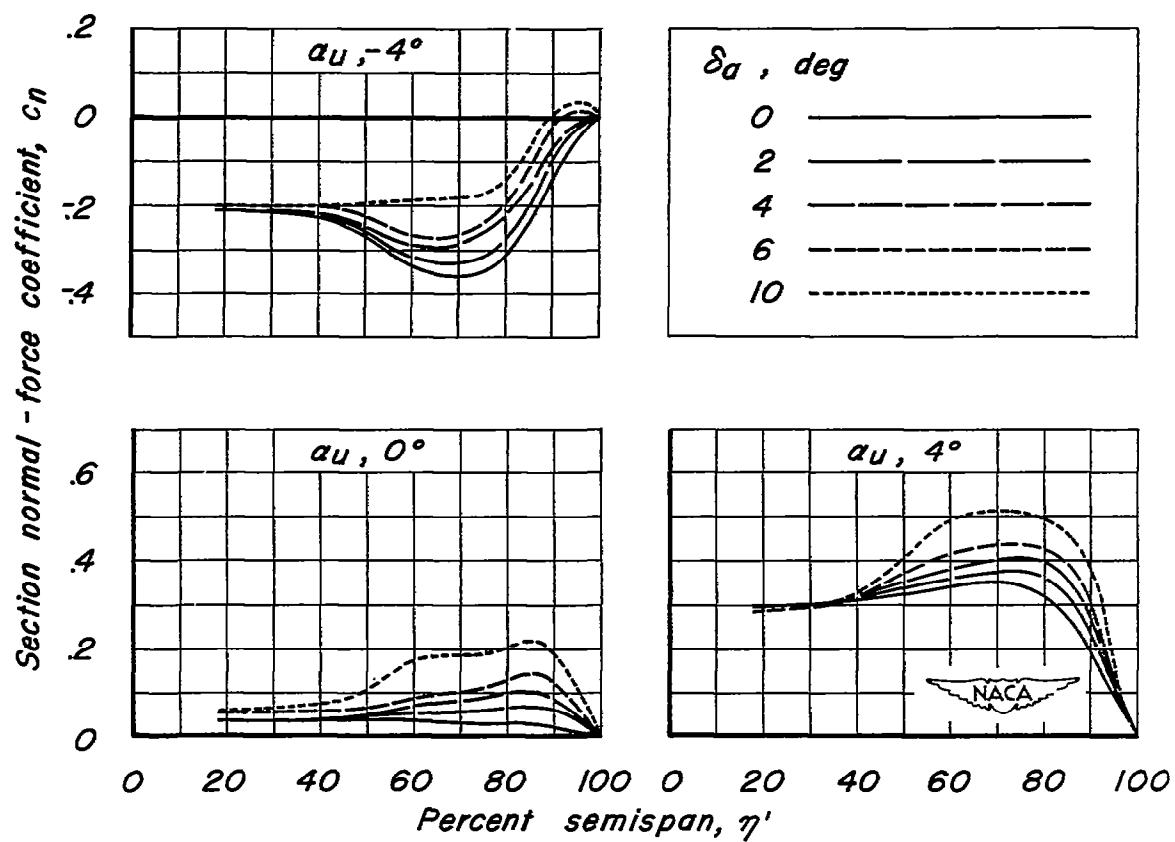
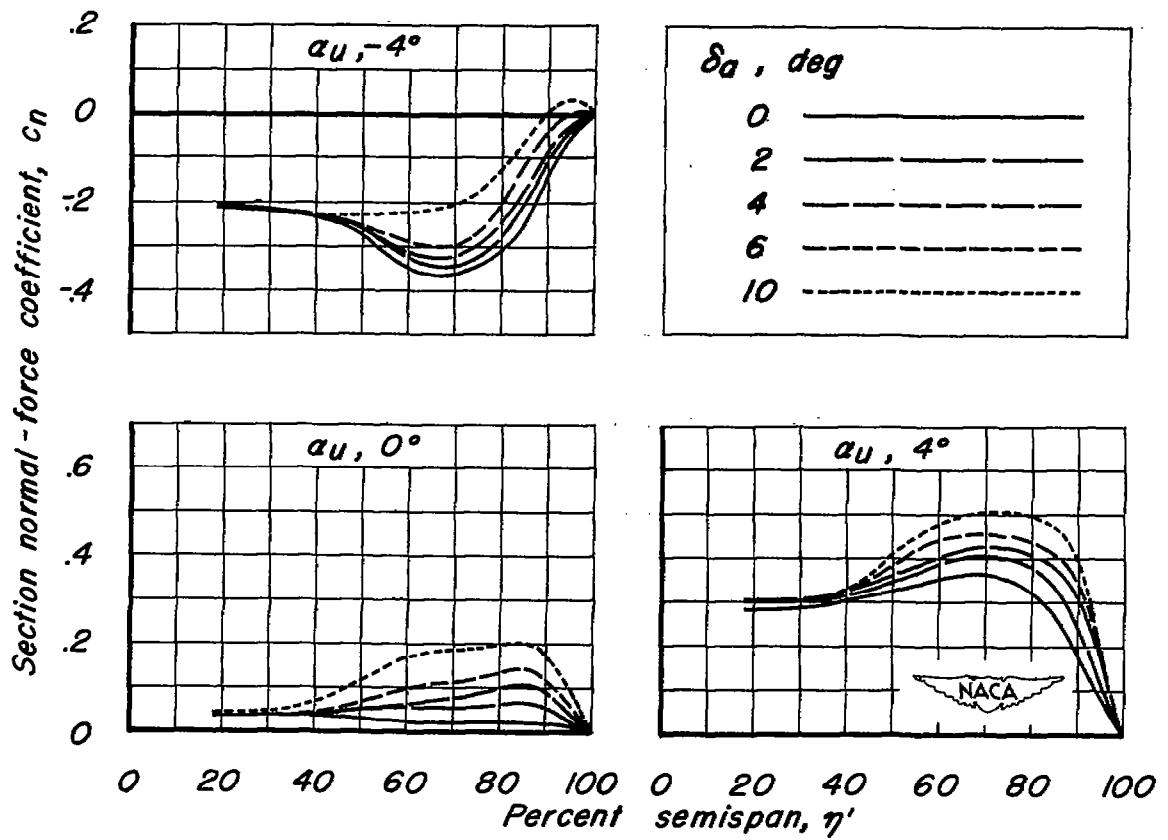
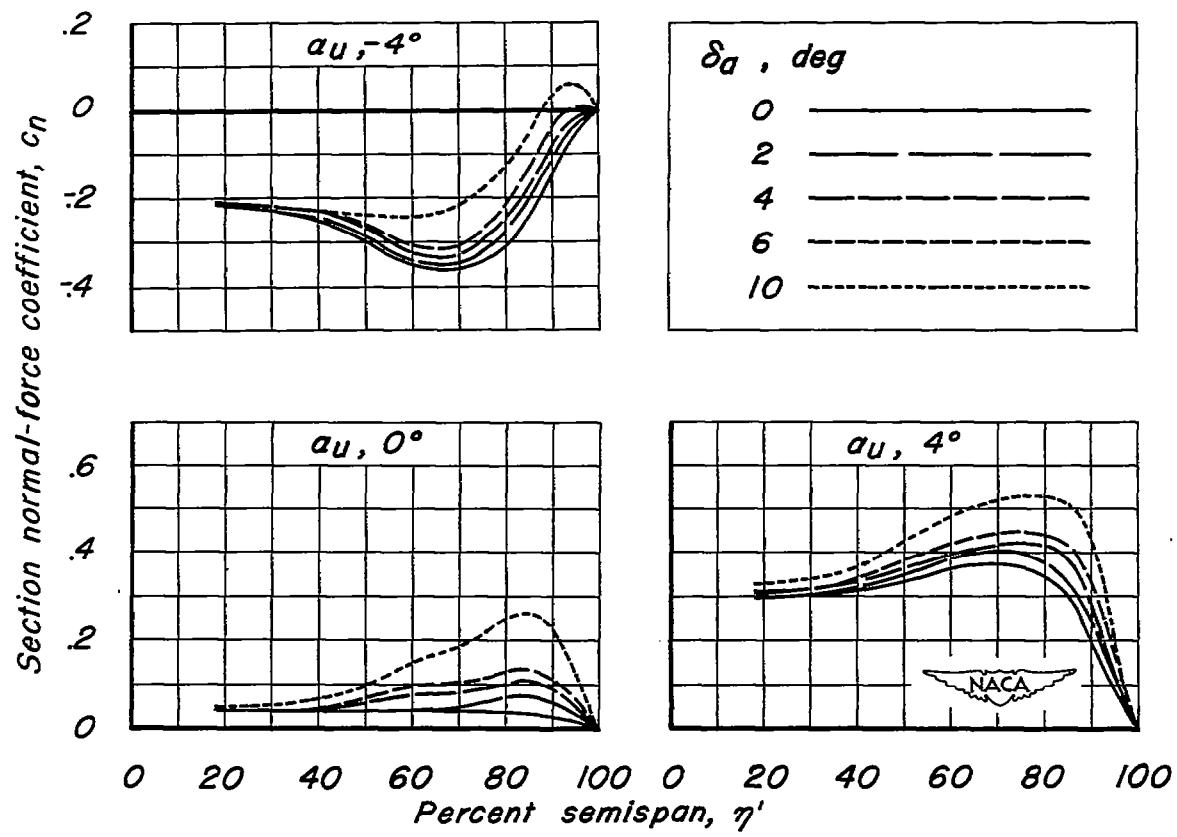
(c)  $M, 0.825$ .

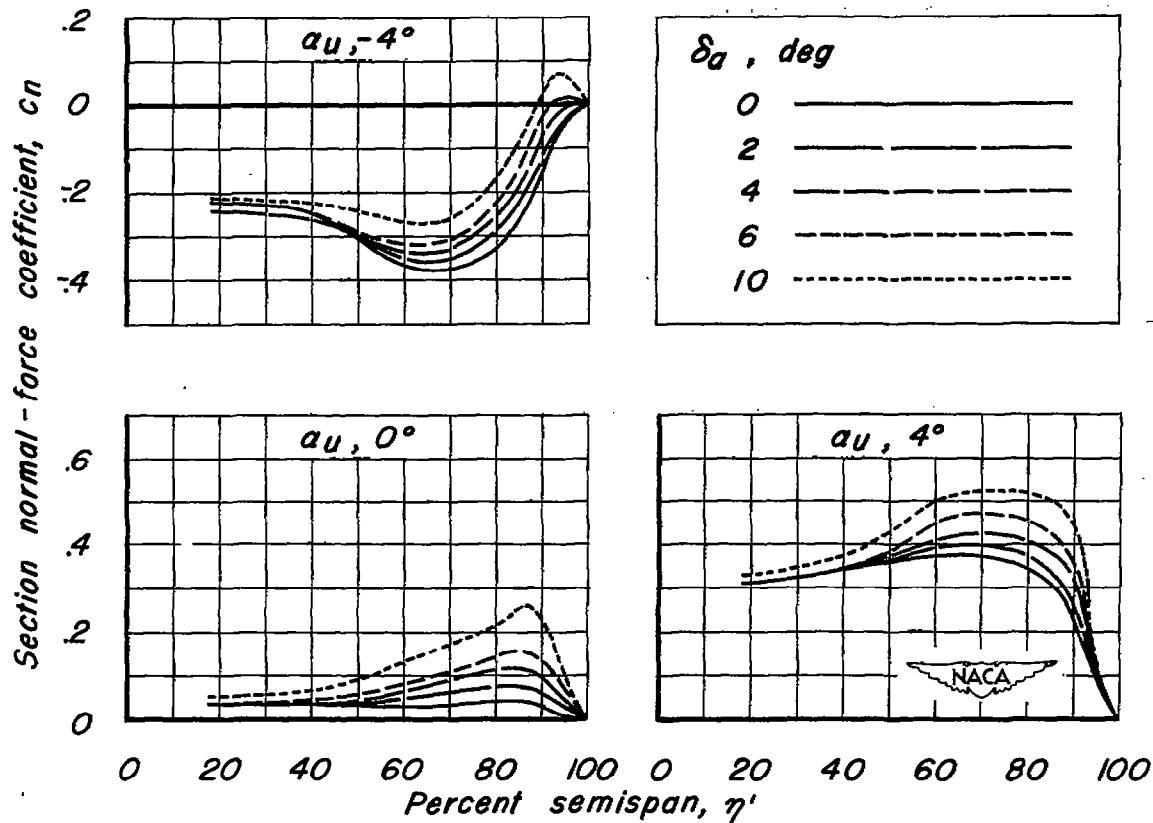
Figure 6- Continued.



(d)  $M, 0.85$ .  
Figure 6.-Continued.



(e)  $M, 0.875$ .  
Figure 6-Continued.



(f)  $M, 0.90$ .  
Figure 6-Continued.

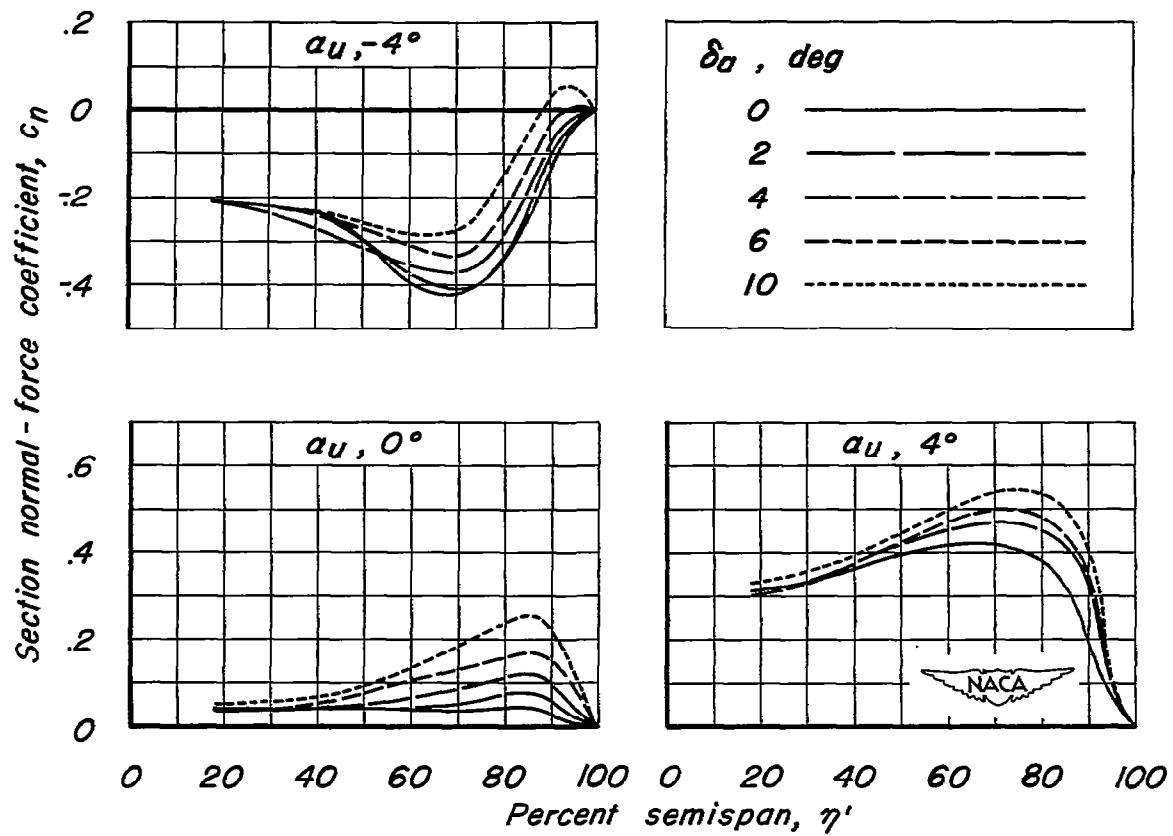
(g)  $M, 0.925$ .

Figure 6-Concluded.

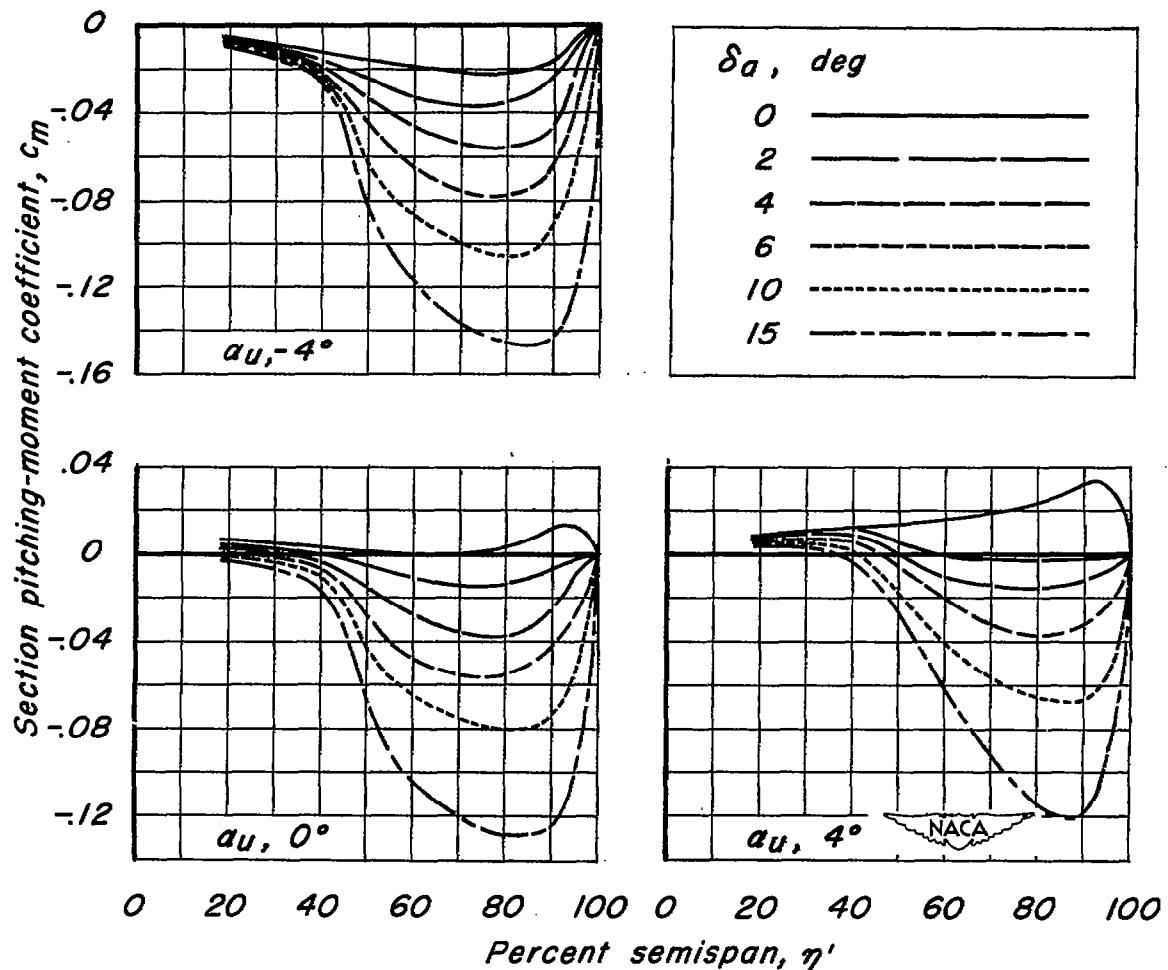
(a)  $M, 0.75$ .

Figure 7.—Spanwise variation of the section pitching-moment coefficient. Wing unswept.

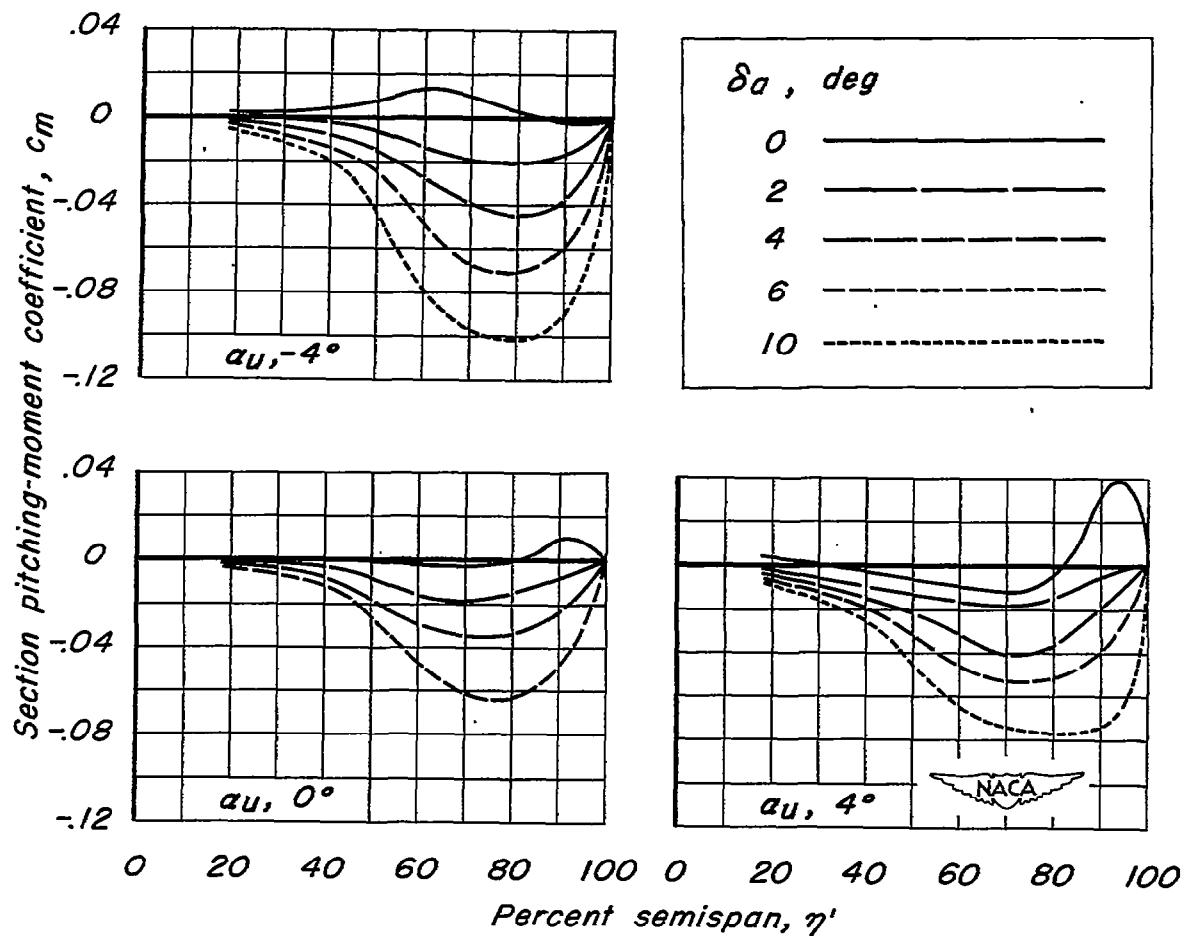
(b)  $M, 0.80$ .

Figure 7.-Continued.

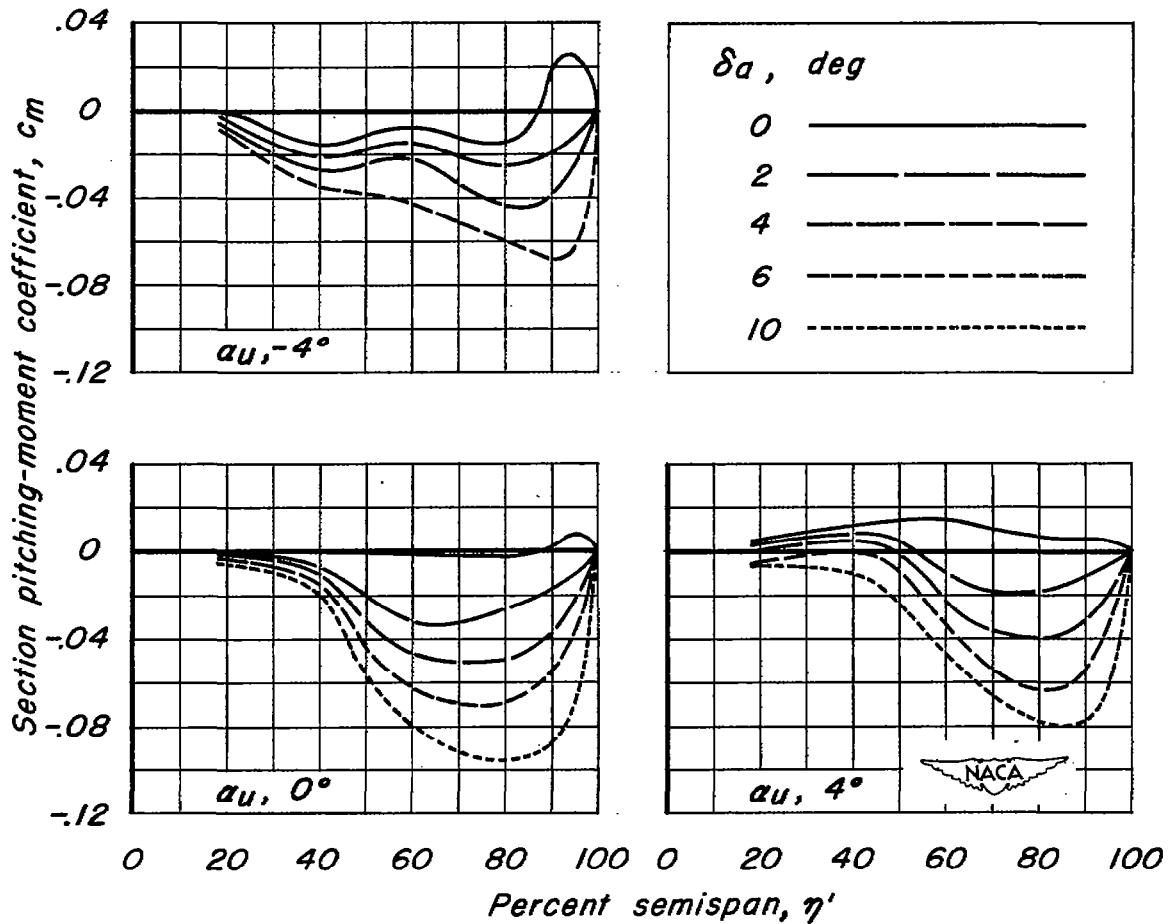
(c)  $M, 0.825$ .

Figure 7.—Continued.

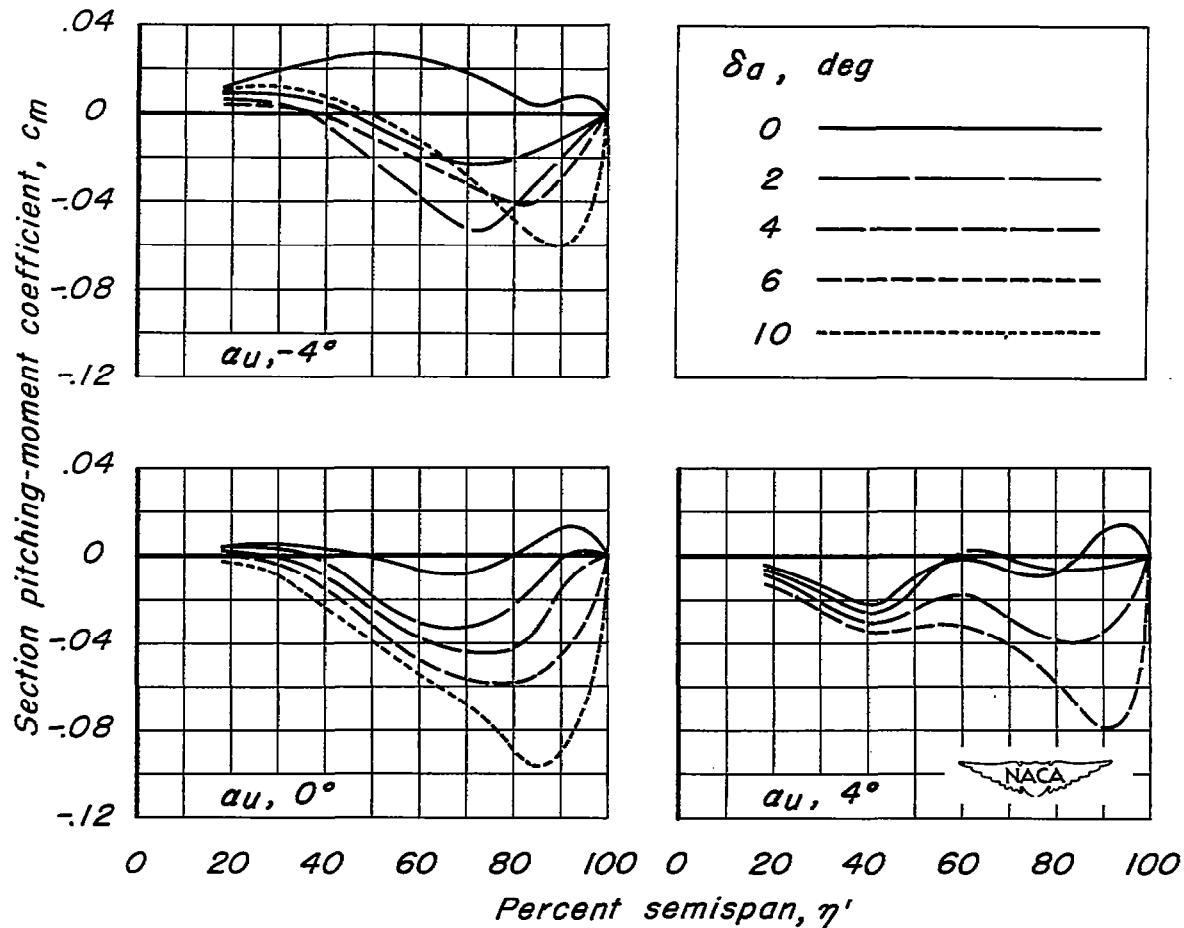
(d)  $M, 0.85$ .

Figure 7-Continued.

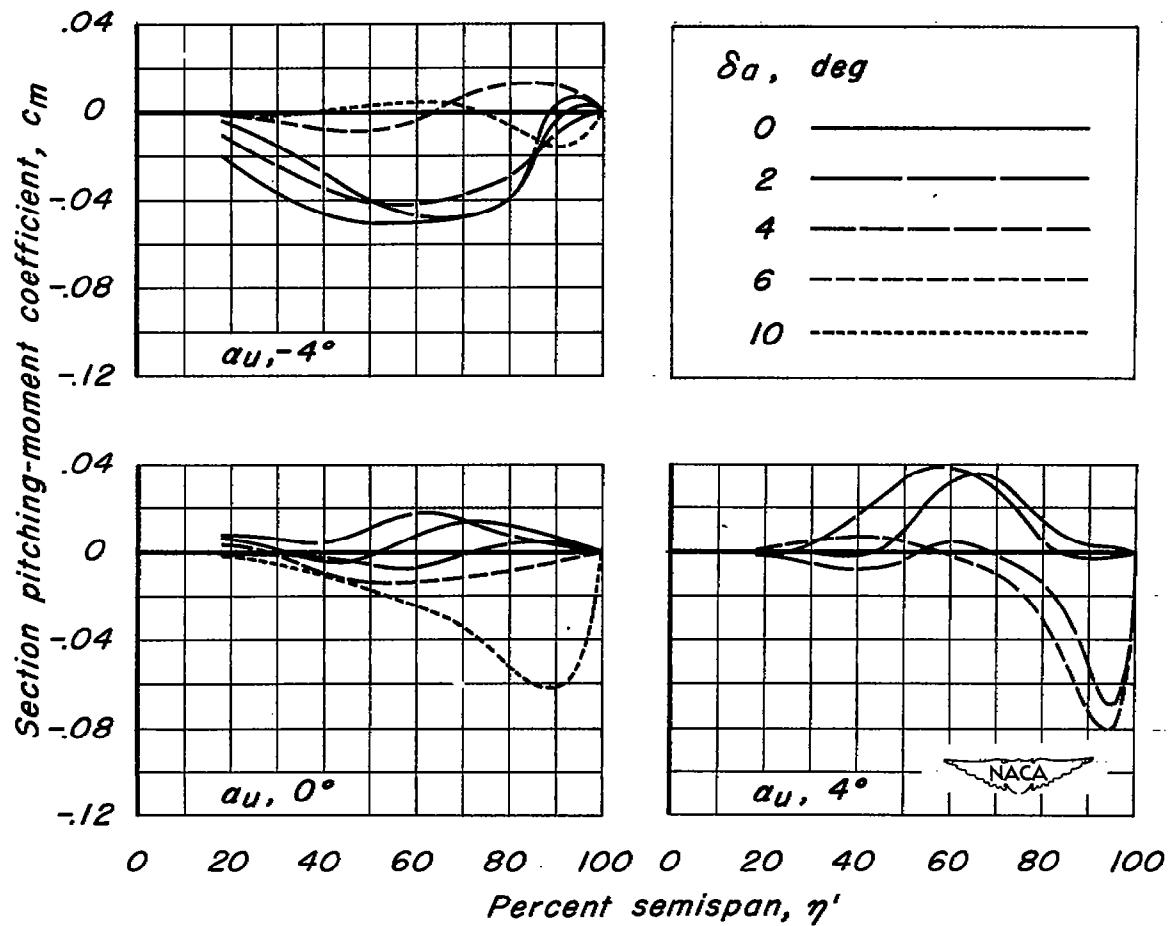
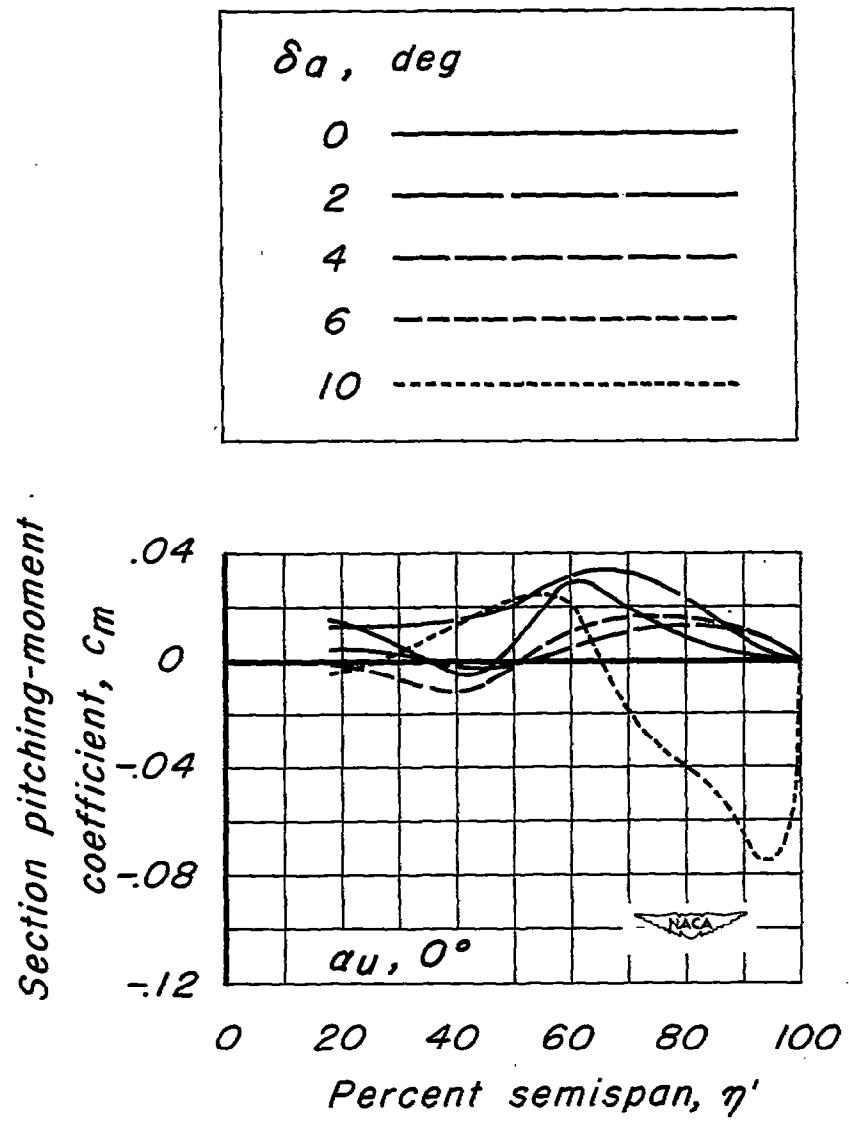
(e)  $M, 0.875$ .

Figure 7.-Continued.



(f)  $M, 0.90$ .  
Figure 7-Concluded.

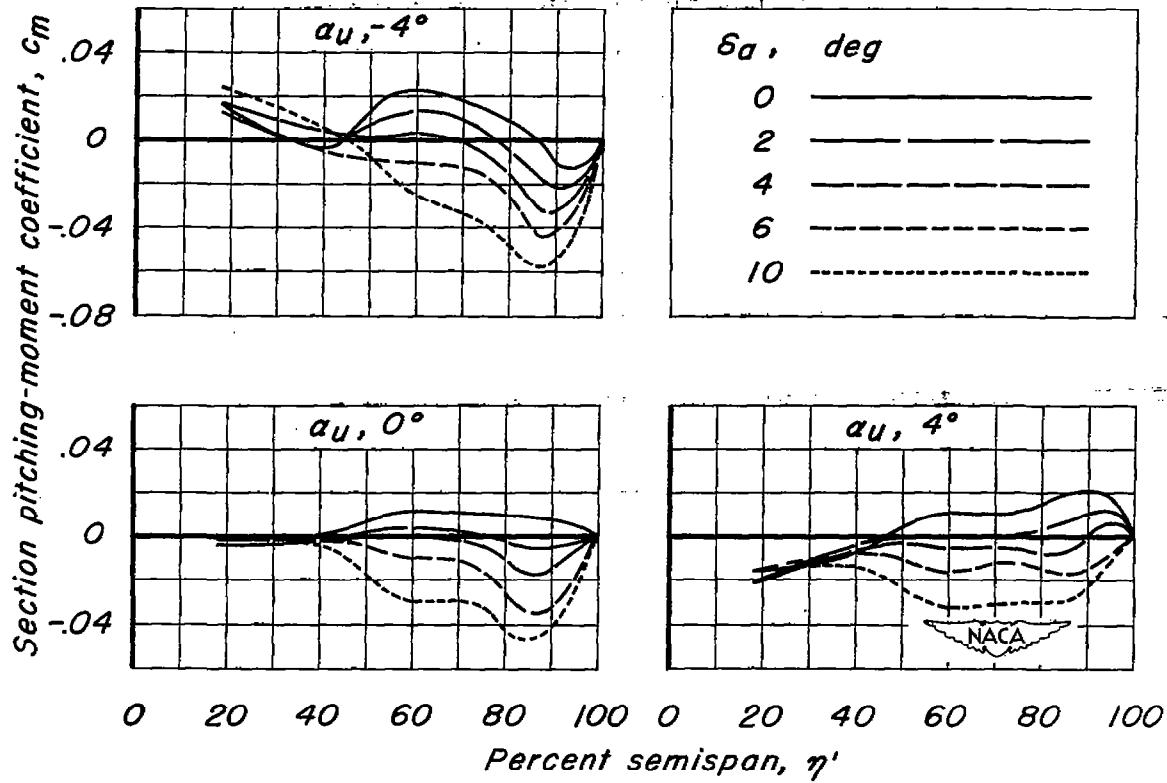
(a)  $M, 0.75$ .

Figure 8.- Spanwise variation of the section pitching-moment coefficient. Wing swept back  $45^\circ$ .

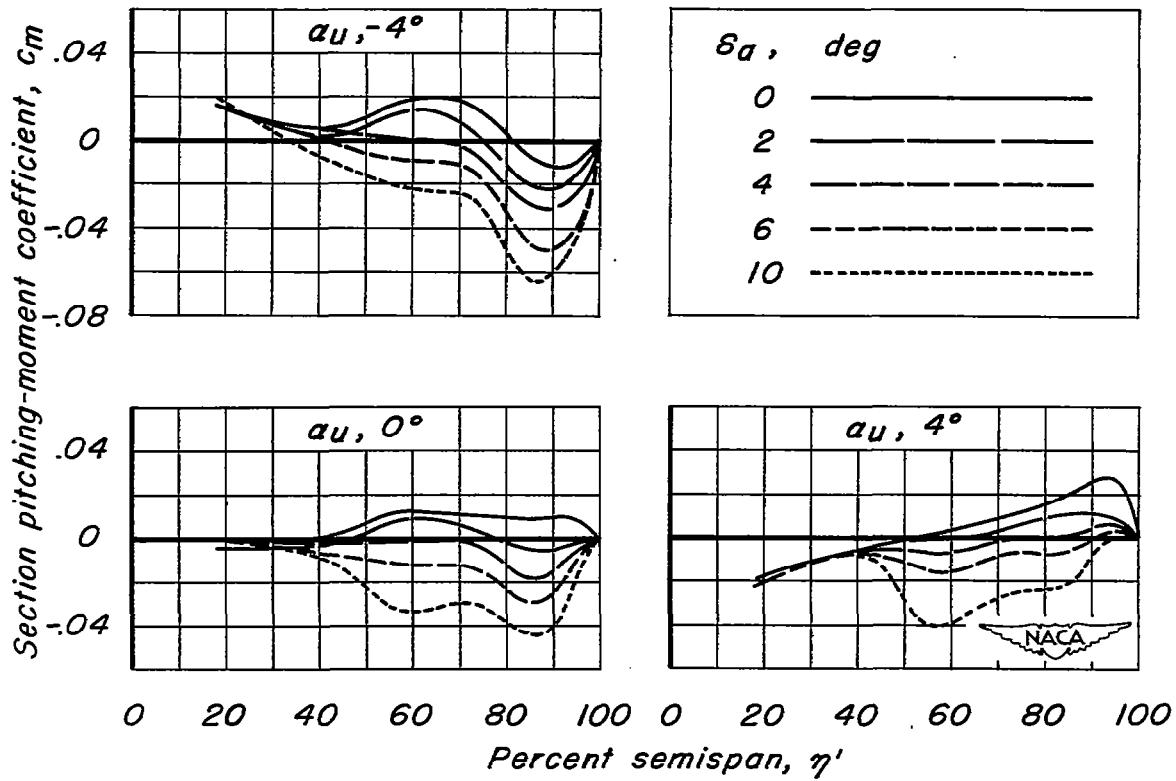
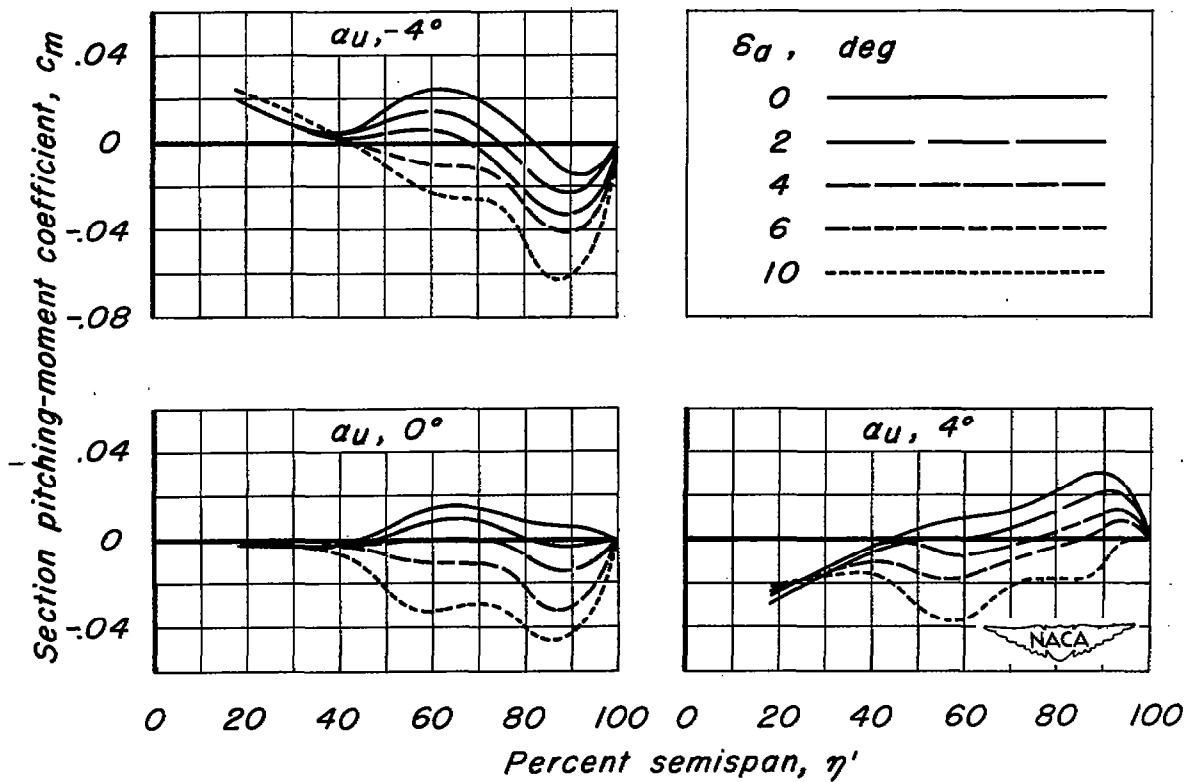
(b)  $M, 0.80$ .

Figure 8.-Continued.

(c)  $M, 0.825$ .*Figure 8.-Continued.*

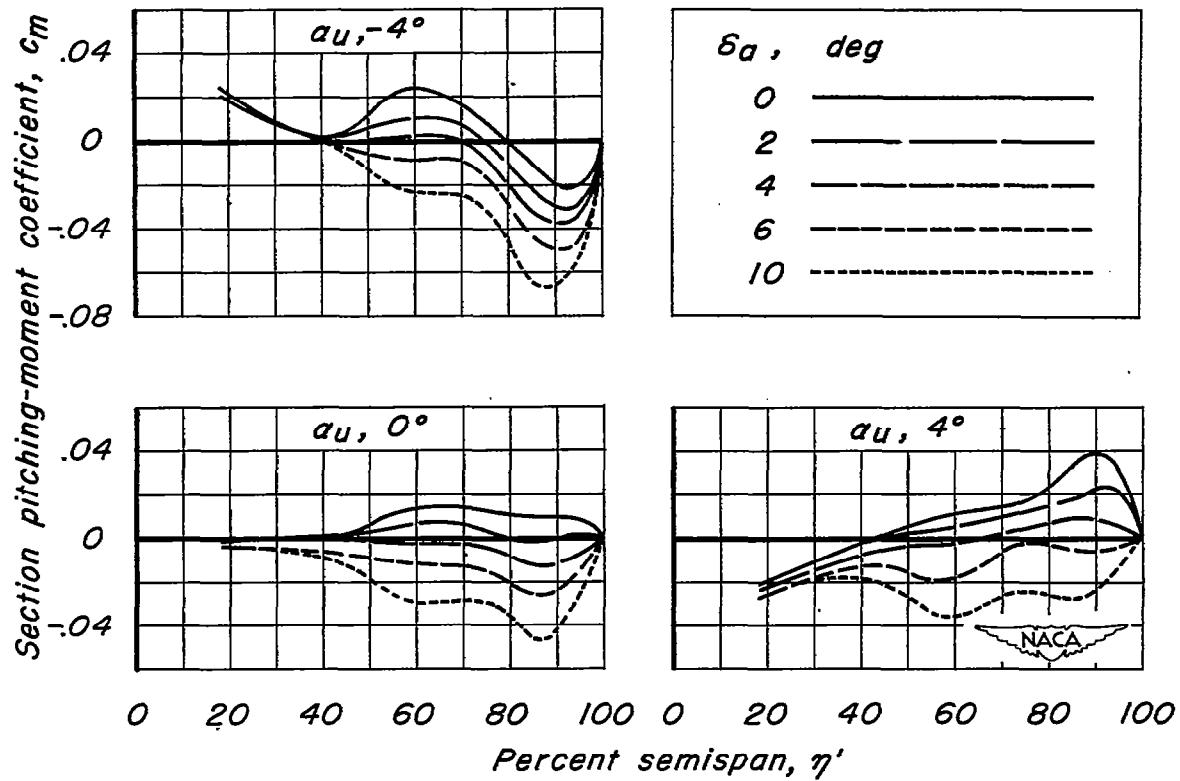
(d)  $M, 0.85$ .

Figure 8-Continued.

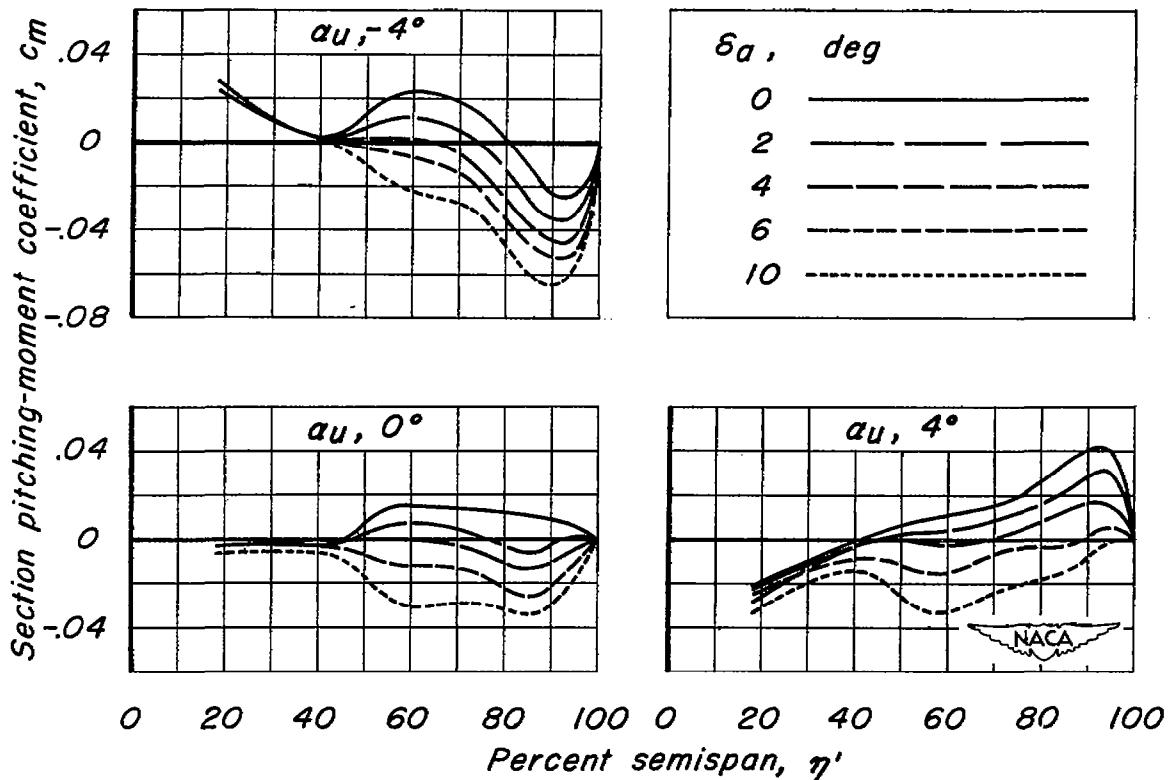
(e)  $M, 0.875$ .

Figure 8.-Continued.

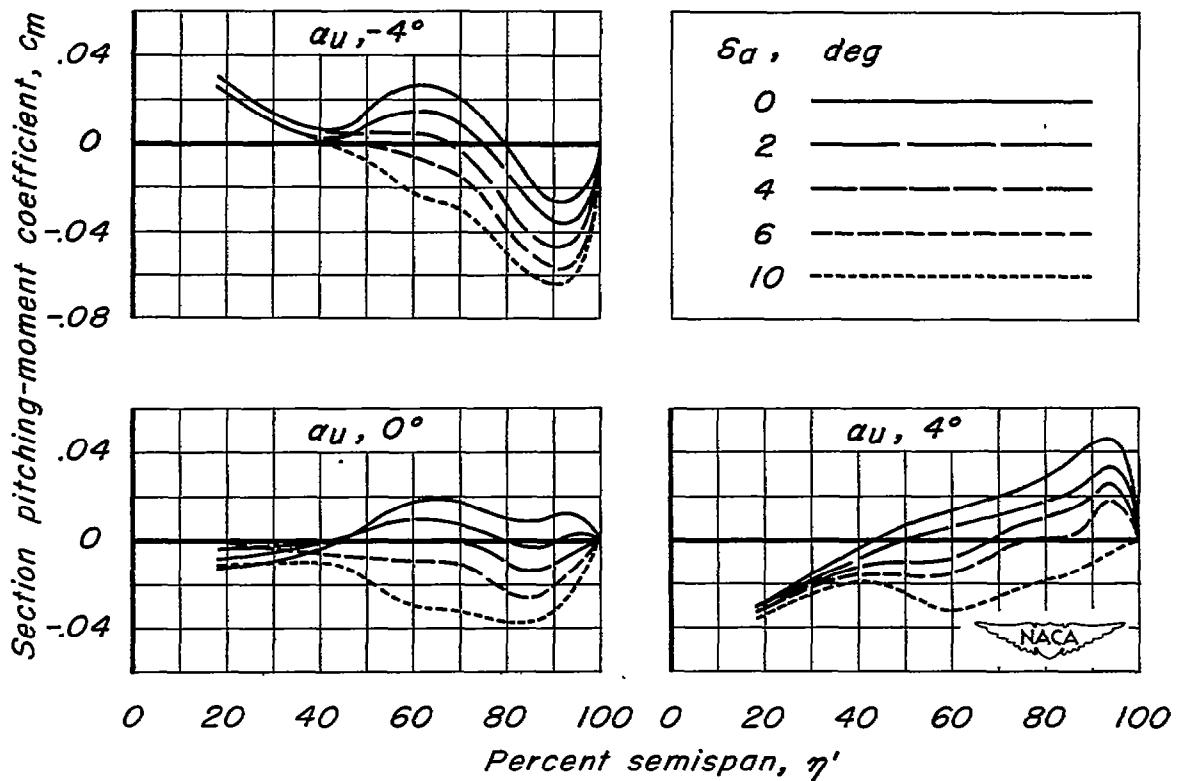
(f)  $M, 0.90$ .

Figure 8.-Continued.

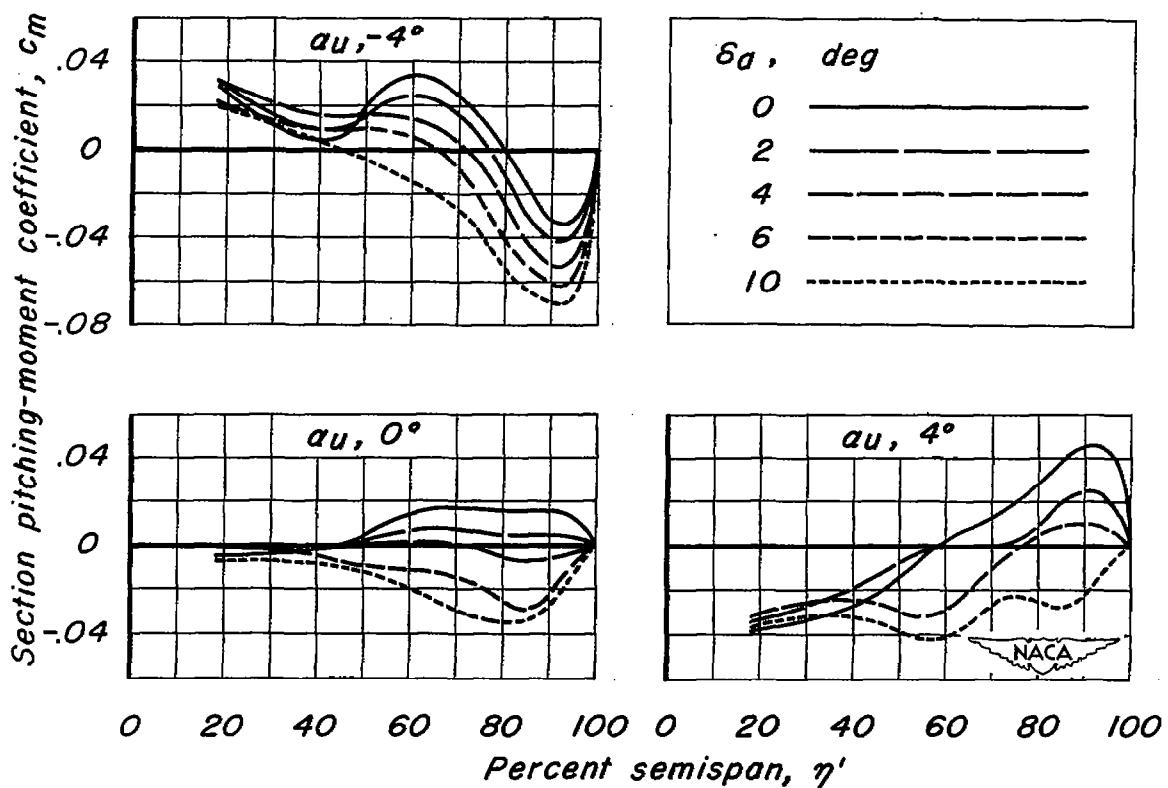
(g)  $M, 0.925$ .

Figure 8.- Concluded.

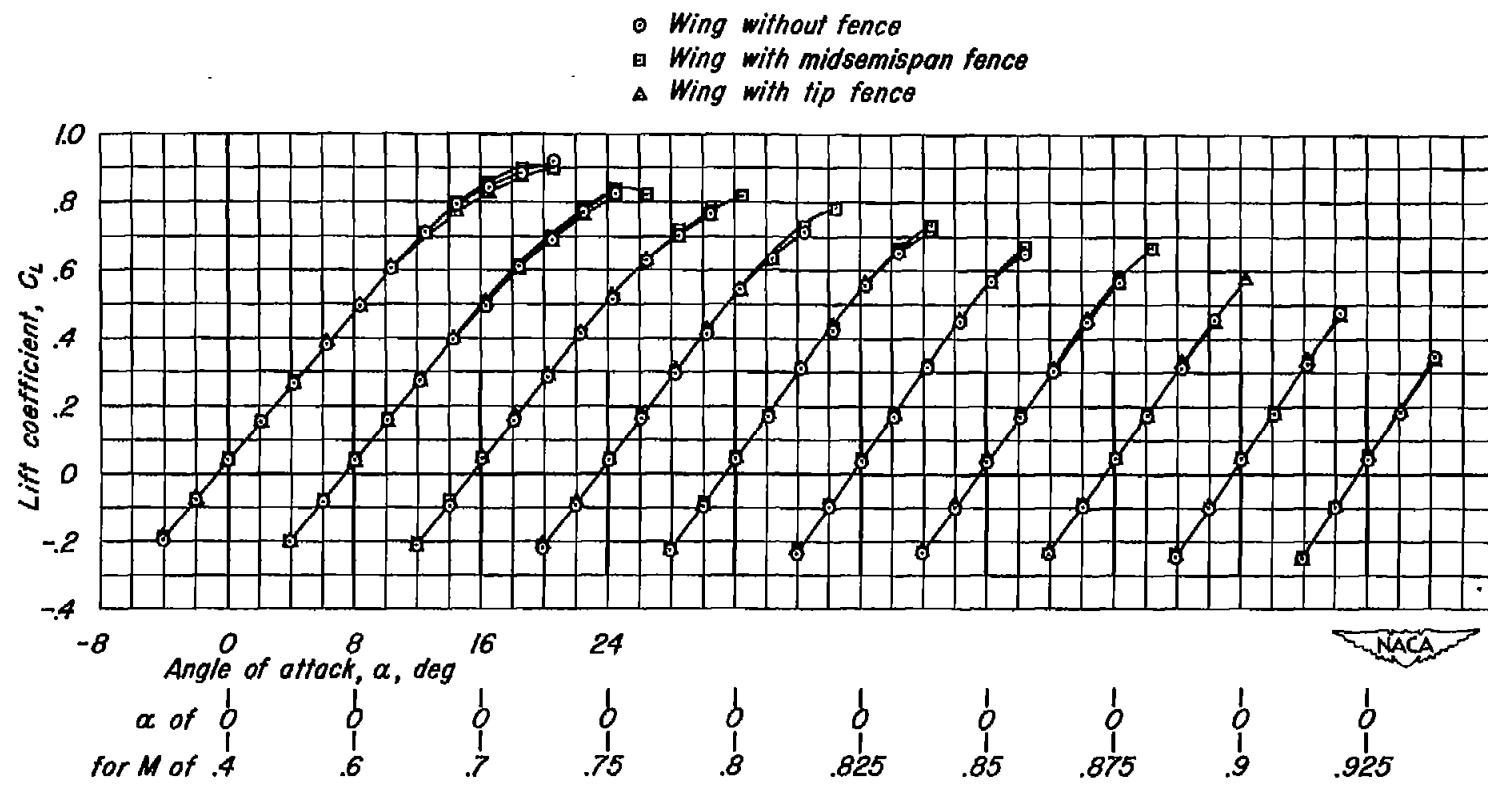


Figure 9.—Variation of the lift coefficient with angle of attack for the wing swept back 45° with and without upper surface fences. Ailerons undeflected.

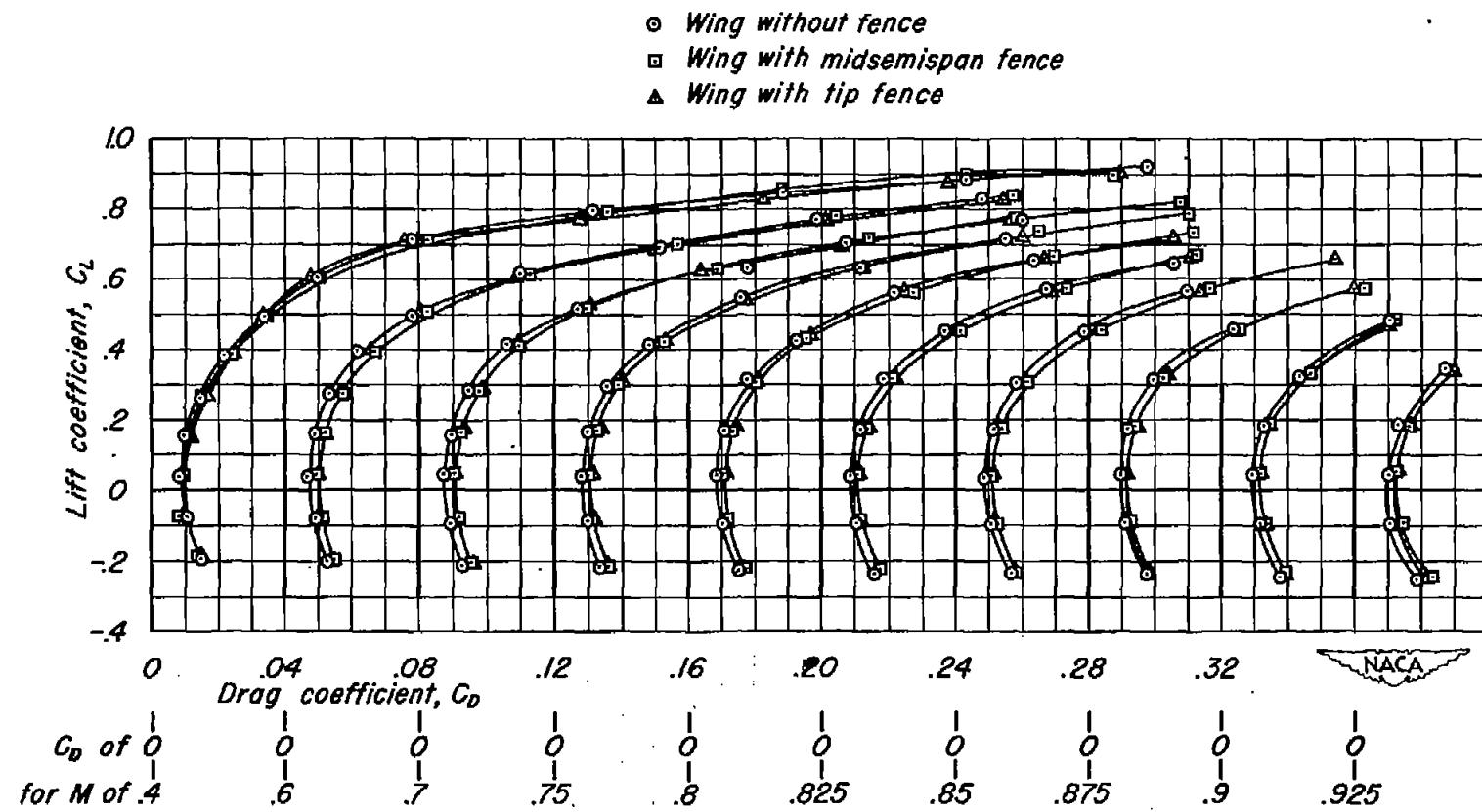


Figure 10- Variation of the drag coefficient with lift coefficient for the wing swept back  $45^\circ$  with and without upper surface fences. Ailerons undeflected.

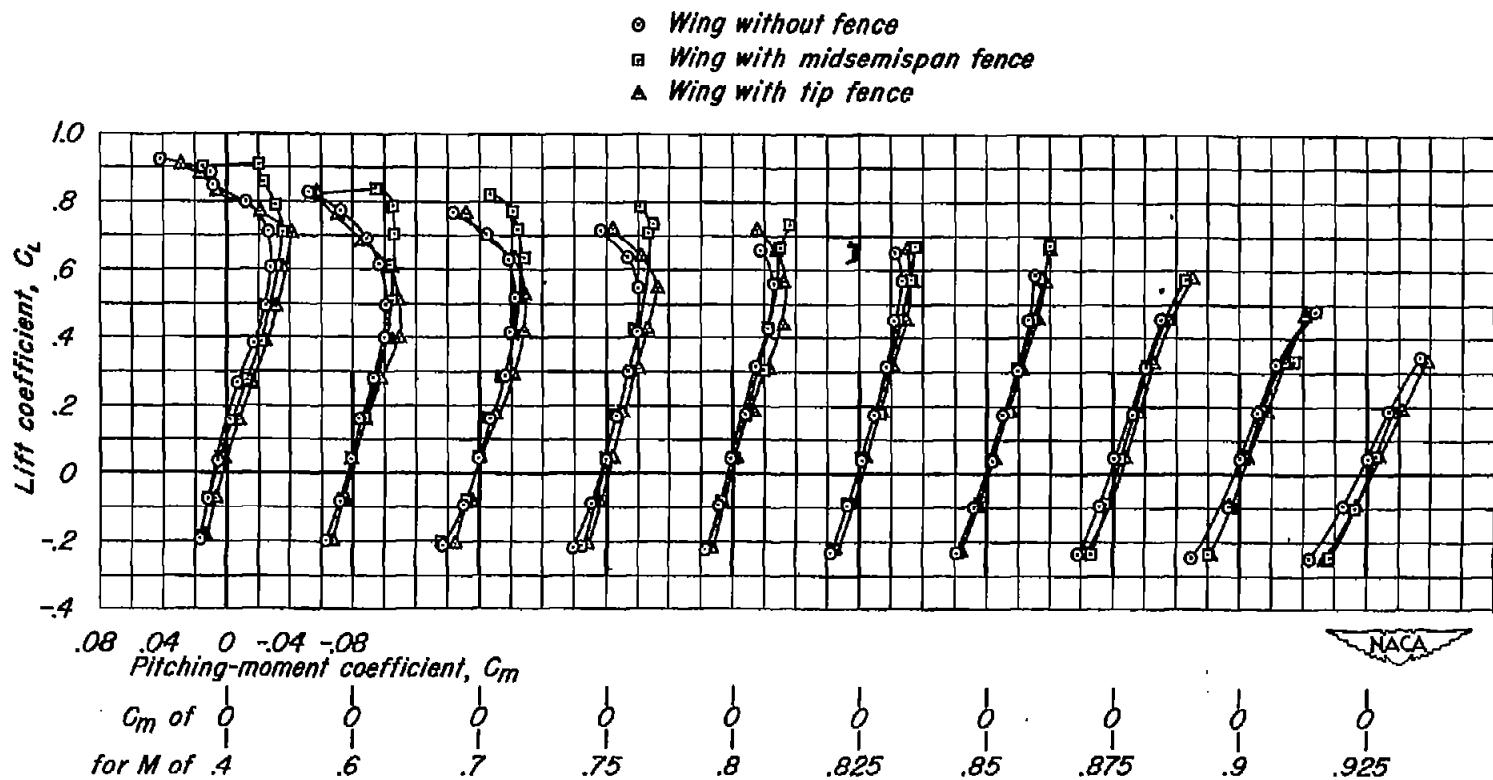


Figure 11.- Variation of the pitching-moment coefficient with lift coefficient for the wing swept back 45° with and without upper surface fences. Ailerons undeflected.

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